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DESIGNING SERVICES FOR HUMAN FLOURISHING

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ABSTRACT

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Although technological development has provided humankind many notable progressions in how they live, work, or communicate, sometimes the design of the technology fails to take human well-being into account, and thus impairs it. These deficiencies often occur after the technology has been taken to use, which is why instead of criticizing it afterwards, the ethical discussions have been tried to be included in the design phase of the technology. This way technology could be designed more ethically, resulting in better social impact when it emerges to society.

This thesis proposes a technological design model for creating services that increase people's well-being and possibilities for flourishing. Human flourishing describes the state of thriving on multiple areas of life. To form the Design For Flourishing (DFF) model, a review to relevant literature and a case study were made.

The literature review consists of three chapters. The first chapter inspects the methods and terminology of ethical technology design. It introduces the most reviewed approach, Value Sensitive Design, which is later used as the basis for including human flourishing related values in service design process. The second chapter introduces two distinct concepts of happiness, hedonia and eudaimonia, to have an idea of what people think of happiness or a good life. It also researches the effects of the elements of well-being theory called PERMA model, and complements it with other theories, such as the Broaden-and-build model of positive emotions, concept of Flow, and Self-Determination Theory. The second chapter concludes by defining flourishing based on the findings on happiness and well-being.

The third chapter introduces the terminology of service design and combines the findings of the earlier chapters and the case study to form the DFF model. DFF is ultimately a design framework that uses Value Sensitive Design's ethical investigations to find the essential values in the design context to examine whether they support human flourishing or not. The third chapter introduces the philosophy of DFF and presents a practical methodology to design for flourishing.

The case study was conducted as a real-life service design project in the industry. It aimed to see what sort of possibilities or benefits the service design process would have, if positive emotions and meaningfulness were emphasized throughout it. The case study consisted of a stakeholder analysis, narrative interviews, a co-design workshop, and continued to the design and development based on those. The result of the project was a crowdfunding web service for elderly people's wishes.

The observations from the service design process, such as how storytelling benefitted interview results, how focusing on positive emotions resulted in positive outcomes, and how values in the design context were held on to, inspired the methodology of DFF. There are some inconsistencies between the case study and the literature review, because the case study was conducted before reviewing the literature: for example, the case does not concern all the PERMA elements, which were supposed to support flourishing. The study also created further ideas on how designers and service providers could have this sort of approach in their work contexts, which are discussed in the final chapter.

The DFF model is meant to help designers or developers create technology that creates well-being for its users or other stakeholders. Service provider companies can use the DFF model to create new business opportunities and propositions, and to have projects in which the people involved in them increase their possibilities for flourishing.

Keywords: flourishing, happiness, well-being, technology ethics, service design

ALKUSANAT

Olen opintojeni varrella kokenut kaikenmoista. Tähän ajanjaksoon kuuluu aivan mielettömän hyviä hetkiä, joita olen saanut viettää usean hienon ihmisen kanssa. Tähän kuuluu myös niitä heikompia hetkiä, jotka ovat auttaneet kasvamaan. Näistä kokeneena ja oppineena on hyvä siirtyä uudenlaisiin haasteisiin.

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Teemu Viita-aho

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ABBREVIATIONS

DFF	Design For Flourishing
PWB	Psychological Well-Being
SDT	Self-Determination Theory
SWB	Subjective Well-Being
UI	User Interface
UX	User Experience
VSD	Value Sensitive Design

1. INTRODUCTION

Throughout history, technology has been shaping how humans act and behave. While technology has enabled enormous progression and assistance in different aspects of human life, it sometimes comes with unexpected, unintentional, and negative consequences. Recent advancements in information technology have made people and information more connected than ever, leading to increased communication and sharing of resources, but also brought the disadvantages of multitasking and attention distractions [1,2]. Social media has made people more aware of other people's lives, allowing them to be more social and express themselves, but its usage has also given the possibilities for, for example, feelings of depression and low self-esteem [3], jealousy through comparing lives with others [4], elevated body image concerns [5,6], or impaired academic performance [1]. Using and analysing people's personal data unethically to affect their behaviour to suit wanted objectives can further drive them into separate opposing groups and irrational actions, as was seen with United States' presidential elections in 2016 and its aftermaths. In many cases, the negative outcomes of a technology have been noticed only after it has been used for a while.

This unwanted impact of technology to society has shifted attention from evaluating and critiquing the negative consequences afterwards, to taking moral values into account in the design phase of the technology [7,8]. For a long time, technology has been guided by the concept of functionality, meaning that its worth is valued by how well it serves the task it has been designed and engineered for [8]. This is problematic, because focusing solely on the quality of functioning leaves out the ethical discussion of, for example, the *social impact* of the technology, such as how it will affect people besides its original intent. Matters like this has given the rise to incorporating ethics in the design of technology [7,8,9].

Due to economic situations and policies in the world, many organizations today exist solely to create economic profits. While economic growth is important, considering the welfare of people, money is not always the only option for people's *well-being*. In fact, economic growth might even obstruct people's well-being, if the profit is being made at the expense of it. Who has the responsibility to prevent these actions? How could the organizations, responsible of new technologies being made, contribute also to people's well-being?

The *designers* of the technology are usually the people that decide what sort of functionality the new technology will deliver. Usually technology is designed to fill some sort of need or fix a problem that gives trouble to people. However, these design *opportunities* always reflect the time they are being made in. To create meaningful products and services for this day, the technology designers should stay aware of the modern, transforming world. If the designers fail to notice matters of this day, their solutions will not either fix any relevant problems. If, for example, human well-being is not recognized as an important goal for designers to have, new technology will not contribute to the betterment of it either.

When researching human well-being, a term called *flourishing* often appears. Human flourishing, in its simplest meaning, is used to describe the optimal state of human functioning and way of living. Human flourishing describes well-being in positive way, so that the way of living focuses on fulfilling positive aspects in life, not really on meeting the neutral, problem free state of life [10,11]. Aiming for flourishing thus helps people to be well and happy, which is an extremely beneficial goal for individuals.

Is it possible to design new technologies to help people to flourish? The question cannot really be answered before knowing what makes people flourish. To find out the meaning and causes of flourishing, this thesis' first research question (R1) is "*What is human flourishing?*". By knowing the description of human flourishing, perhaps the technology design can also be directed towards it, increasing the technology users' well-being. Or at least the technology will not have features, that obstruct the users' well-being. The question that remains is how this—partly philosophical and psychological—term "flourishing" can be applied to the design process of new technology services. This thesis' second research question (R2) aims to find out that: "*How to design services for human flourishing?*".

To investigate these questions, this thesis conducts a case study in real-life context, and a literature review. The case study experiments and gathers information about what kind of effects would the service design process have, if human well-being is included as an important objective in it. The literature review, on the other hand, aims to gain the understanding of what human flourishing is, and what matters in ethical technology design. The findings from these two help to form a methodology for designing services for human flourishing.

The thesis advances as following: chapter 2 continues to expand and explain the topics of the introduction. It includes the questions, problems, methods, and terminology of ethical technology design. Chapter 2 also introduces the most researched and promising

methodology for ethical technology design: Value Sensitive Design. This methodology will be used later in the thesis to support its own model.

Chapter 3 focuses on understanding and explaining the description of human flourishing: what is it made of, how does it occur, and what benefits does it have. To understand flourishing, chapter 3 also defines the more popular terms of happiness and well-being, since they are often confused with flourishing. Chapter 3 uses the PERMA model from the field of positive psychology to provide a base for the elements of flourishing. Research question 1 ("What is human flourishing?") is answered in this chapter.

Chapter 4 aims at answering research question 2 ("How to design services for human flourishing?"). It does so by proposing a model (Design For Flourishing) for including human flourishing as the most desired design objective, and methods to support the ongoing design process. The theories and methods presented in chapter 4 are a combination of the literature review and the results of the case study.

Chapter 5 describes how the case study was prepared and conducted, what was the context it was made in, and what sort of observations were made from it. The case study was done as a real-life service design project. Chapter 6 ends the thesis by discussion of the results of this thesis and providing practical concerns for the Design For Flourishing model.

Designing for human well-being is an essential objective for today's organizations; one of the objectives of the United Nations' *Sustainable Development Goals* is "health and well-being" [12], which gives it a global relevance. While well-being is, and has been, studied for a long time, there are not many technological design models to help designing for it – neither are technology students taught about well-being that much, if at all. And while there are some models to design for well-being, having a goal of designing technology services for human *flourishing* is a new perspective among these models. If the designers in modern organizations had the knowledge and tools for designing for well-being, maybe then they could start pushing those ideas to their organizations too. This thesis aims to provide knowledge and methods for that need, for today's designers.

2. ETHICS OF TECHNOLOGY DESIGN

Ethics is a branch of philosophy studying and conceptualizing the question of morality; whether something is right or wrong. Ethics often compare the rightfulness of different actions through investigating *values*, which are something that people hold and strive for. This chapter aims to define what values are, how they occur in technology design, and how should a designer or an organization approach different values in technology design. The most promising and reviewed approach is Value Sensitive Design (VSD), which will be introduced in section 2.2.

2.1 Value trade-offs

People often have a hierarchy of values: some values are more desirable than others. Different people also value different things. This sets people's values to be on a constant battle of which should be preferred and strived for, meaning that some values are also diminished at the same time. To be *value sensitive* is to observe and evaluate values occurring in different contexts.

2.1.1 Defining values

To understand value sensitivity, values, and their meaning to people, should be understood. "Value" as a word is difficult to define. Probably the simplest way to define "value" is in a sense of monetary value. This way, something's value is defined by how much it costs. But if values, that can't be measured in a monetary sense (e.g., human values, such as happiness), are considered, the evaluation and comparison become difficult, as people look at values from a subjective viewpoint.

Defining the meaning of values is not simple, but it is most often linked with the notion of *desirability*. Burmeister [13] describes that values "*frame our understanding of what is desirable, good or worthwhile in life*" (p. 189). A value is something that is treasured, implying a threshold level of how strongly something is held [13]. If one valued highly e.g. security, they would not mind spending money in things that provide security, such as home protection, insurances, or antivirus software, because they are more desirable than the other things gained with the same monetary value. This way, values describe the *end-state* that one wants to achieve [13,14]: the act of buying an insurance is not valued in itself, but the end-state—the provided security—is what is desirable.

Striving for desirable end-states means that values, to some extent, also dictate one's behaviour. Values give direction to one's actions and fills them with emotional intensity

[14,15]. Though, all judgments of people's actions are not derived from values. People can have *preferences* concerning e.g. what food they like. Preferences are different from values as they do not describe desirable end-states, but only specific courses of actions that one takes. This difference implies that values are fundamental to what makes us human [14,16,17].

In sum, "value" is most easily understood in its objective monetary sense, which although fails to express the difference of subjective human values. Values describe a desirable end-state, such as security, happiness, or peace in society. Values guide our actions as human beings, but they should not be confused with preferences.

2.1.2 Whose values are important

The focus of technology's design is to deliver some sort of value, which the user of the technology holds important. For example, in the case of a refrigerator, preserving food is an important value. That does not mean the refrigerator could not be used for something else, but if it fails to preserve food, which is the task it is intended for, it is worthless in that sense. Also, while each design of technology is intended to make some sort of action or task possible, at the same time it obstructs other possibilities of action [18]. Refrigerator is not the technology to warm your food up for eating.

The *designer* of the technology is usually the person to decide, what are the values the technology will deliver. However, the designer might have instructions, limitations, or requests from other people, which are not part of his/her own vision of the technology. This puts the designer to constantly consider, which values are more important than others. Preferring, or promoting, some value over another, is known as a *value trade-off* [7,9,19,20,21,22].

In their article, Gray et al. [19] explained that "*design is rarely a solitary endeavour; in contrast, the complex entanglement among designer responsibility, organizational pressures, and neoliberal values often politicizes and prioritizes the profitability of design above other social motivations*" (p. 9). These days, at least in the commercial world, the case often seems to be to value monetary profits over almost anything. It is somewhat understandable, considering the purpose of business and economics itself, which is to provide profits to the owners of the business and other stakeholders, but the consequences of some of the decisions being made can be unjustifiable (e.g., rapid climate warming). The design of technology will always have an ethical consideration to it—whether it is wanted or not—which is why the discussion of value trade-offs and value conflicts should be present from the design's beginning [7,8,23].

A modern example of economic value surpassing human values would be the questionable actions of social media sites, such as Facebook. *Privacy*, in a sense of *being free from public attention*, is a constantly growing topic as people's private information is being shifted to the internet day by day. Facebook is an example of collecting and distributing people's information in form of research data [9,24]. While researching their users is essential for Facebook's business, it may in some cases result to the discrimination of people's privacy [9,24]. Also, Facebook lives out of the content that its users create on the site: making the status updates default to private would generate less public content to the site, therefore resulting in less profits [9]. Perhaps privacy is an important value for Facebook, but there are some other values that are even more important, thus creating a value trade-off.

Design is a process of different people with different viewpoints on values: business managers understand and advocate for economic values, engineers could promote e.g. efficiency or speed, and marketers and graphic designers argue for aesthetic values [9]. This results to constant value conflicts and solving them is not an easy task. There are too often cases, where the final product or service affects the user's life, work, or bank account negatively, and often it is the case of undermining end user value in favour of business' shareholder value [19].

2.1.3 Dark design patterns

Unethical goals and values can sometimes be incorporated in design in a way, that does not seem obvious at the first sight. On their website, Brignull et al. [25] list types of deceptive user interface (UI) design solutions, which are aimed at tricking people to do unwanted actions. They define these solutions as "dark patterns", which are, according to them, "*user interfaces that have been carefully crafted to trick users into doing things…they are not mistakes, they are carefully crafted with a solid understanding of human psychology, and they do not have the user's interests in mind*" (p. 524) [26].

Designing functionality for a user is a persuasive act [27]. While persuasion in design is often welcomed, for example, guiding the user to make the overwhelming UI easier to learn, it can also be done with malicious intentions. Dark design patterns include UI elements, that try to e.g. hide relevant information in hope of the user not noticing it, force the user to do some actions before they get to do their original and wanted task, make navigation and user flow overly complicated in hope of the user not finding something relevant from the menus, or just visually construct the UI to highlight actions in favour of the service provider [19].

Greenberg et al. [26] also bring up the term of “anti-patterns”. How these differ from dark patterns, are a result of the designer’s intention. While dark patterns are intentionally crafted to manipulate the user to do unwanted actions, anti-patterns are unintentional design elements or features, that result in negative experiences [26]. Whether these design patterns are intentional or not, they have a negative influence on the user, the designer, and ultimately for the business of the service provider itself, as people start to avoid malicious intentions and bad UX.

Without ethical instruction and reasoning, the UX designer, or the developing engineer, could become complicit in manipulative or unreasonably persuasive practices [19]. Though, fighting the organizational and economic pressure, in favour of e.g. social and human values, and the designer’s own vision, might be too overwhelming for a single designer. Therefore, to some extent, the ethical reasoning should be something that comes from different parts of the organization, so the individual designer with proper ethical intentions does not get oppressed. A modern organization should be aware of the context of a globalized society, act according to it, and translate morally righteous values into the design of technology.

In sum, different people value different things. Technology is designed to support an important value for the user, but at the same time it diminishes other values. The designer of the technology often decides which values should be supported, though pressures from organizations or societies can put designers to do unwanted design decisions. For example, economic pressures from the organization could force the designer to undermine end user value in favour of increasing monetary income for the organization, creating dark design patterns. This would be a trade-off for monetary value over end user value. Identifying these sorts of trade-offs requires ethical considerations and value sensitivity.

2.2 Value Sensitive Design (VSD)

From the rising interest of integrating moral values into the conception, design, and development of emerging IT, formed an approach called Value Sensitive Design [18]. It is a model proposed by Friedman et al. [21] that, according to them, is a “*theoretically grounded approach to the design of technology that accounts for human values in a principled and comprehensive manner throughout the design process*” (p. 1). It is claimed to provide a multidisciplinary theory, a methodology, and an approach, for finding, analysing, evaluating, and translating contextually important values into the design process [7,20,18,21,22,23,28,29,30]. Cummings [20] describes, that the methodology of VSD

provides "*a bridge between analysing ethical issues and the technical engineering design process*" (p. 713).

2.2.1 Proactive and tripartite approach to design ethics

The model of VSD provides a proactive approach on value-embedded design process done in three iterative parts (i.e. "tripartite"). According to Friedman et al. [21] and Albrechtslund [7], VSD enlarges the scope and compensates for the shortcomings of its previous approaches, such as *Computer Ethics*, *Social Informatics*, *Computer Supported Cooperative Work*, and *Participatory Design*. It tries to include all values in the design process, and especially those with moral import [21]. It provides an open space for understanding value trade-offs between human values, systems design, and social forces from technology's usage, without trying to be any unique perspective on the design process itself [28].

VSD has claimed appreciation for being a proactive approach in including ethics to design [18,22]. It is proactive in two ways: firstly, it sets researchers to identify the ethical concerns before the ethical issues arise [22]. Research can be done e.g. by searching literature concerning the values at hand, or evaluating similar technology designs, that have already been done and used. Secondly, it influences "*the design of technology early in and throughout the design process*" (p. 12) [21]. While this sort of proactive stance is not anything unique, it is an essential feature for a design approach, because it distinguishes it from a critique or an analysis of existing technologies [22]. Identifying important key values in the beginning of the design, and holding on to them throughout the process, requires designers to make a lot of fundamental decisions about the architecture and requirements early on [22]. This is crucial for creating a comprehensive integration of the key values into the design. Manders-Huits [18] describes the power of VSD's proactiveness as follows: "*it recognizes the importance of designing technology conscious of human and moral values over a mere retrospective perspective of discussing and dealing with value considerations after a technology has already been introduced and embedded in society*" (p. 277).

VSD is done in three iterative parts. These three parts include *conceptual*, *empirical*, and *technical investigations* [21], which aim to define and clarify the key values of the design from different perspectives. Though VSD is divided into these three parts, it does not mean that they are executed separately: each part is supposed to inform each other in an iterative way and combine insights from the other investigations on how to support

the values effectively [18,30]. Winkler and Spiekermann [30] state that "*due to the interdependency of the three investigations, we consider iterations between them as an important corner stone of the VSD tripartite methodology*" (p. 1).

Comparing this tripartite methodology to typical systems engineering approaches (e.g. the waterfall and the spiral model), there are some similarities to be found. According to Cummings [20], approaches, such as the waterfall model, begin with conceptual design phases. After the concept definition, they continue to include stages for design and development, which can be seen similar to VSD's technical investigation phase. Typically, these approaches end with test and evaluation phases, which are comparable to VSD's empirical investigation. Although the waterfall model follows a linear path of design and development, VSD does not propose a specific order for these investigations to be executed. The order of the investigations, the VSD process, and this thesis' proposition will be discussed further in chapter 4.

In sum, VSD is a proactive, tripartite approach for including values in the design process. It is proactive, as it sets the concern for values before the design, and not after it has emerged in society. VSD consists of three iterative investigations: conceptual, empirical, and technical, which are used to identify and evaluate contextual values and to inform each other during the process.

2.2.2 Conceptual investigation

The conceptual investigation is the most abstract part of VSD. Most of the conceptual work involves values, and their meaning and importance to different people [18]. This investigation is also crucial for identifying the possible future value trade-offs.

The conceptual investigation involves a philosophically informed analysis [18], which consists of two primary activities [18,22]. The first and probably the more complicated activity of the conceptual investigation is to identify the stakeholders involved and affected in the usage of the technology [18,22]. Stakeholders are people that are either directly in contact with the technology, or people that are somehow indirectly affected by the usage of the technology [18,21,22]. Direct stakeholders are the easier part to identify: for example, people that are using the technology, people who are designing and developing the technology, people who are providing the resources, and people who for some other reasons want to be in direct contact with the technology.

The more complicated part of identifying stakeholders is to consider all the indirect people who are affected when the technology emerges in society. The effects of interacting with the technology have much wider range of people than those who are directly involved in technology use [22]. This is most likely the phase, in which many technology

designs fail, therefore producing unexpected consequences. That is the reason why identifying indirect stakeholders is an important step and should not be bypassed. While it is an impossible task for a single designer to do such an exhaustive and comprehensive analysis, that could identify *all* the possible indirect stakeholders, it is necessary to do to minimize the repercussions. More work done on identifying the possible effects on different people means more ethically considered outcome of the technology when it emerges to the society.

The second activity of a conceptual investigation aims at identifying and defining the values implicated by use of a technology [22]. Its goal is to identify and articulate the central values that stakeholders hold on to in a design [7,18]. It is oriented to analyse values in general, and how values are supported or diminished by specific designs [7]. This is the phase of VSD, where it's helpful to turn to relevant literature [7,21] and evaluate similar existing technology solutions. Essential for this phase is to understand the context in which the technology is used. Similar values might be of different importance depending on the context, due to e.g. cultural differences.

An example of this phase can be taken from the original work of Kahn et al. [21]. They describe how VSD was used in designing "Room with a View": using plasma displays in interior offices to produce a window-like experience for the workers. The initial investigation of this design space started with literature review. They drew on the psychological literature that suggests that interaction with nature can provide physiological and psychological benefits. They found multiple evidence on the benefits, and thus hypothesized that an "augmented window" of nature could render these same benefits for office workers [21].

2.2.3 Empirical investigation

Similar to the waterfall model's test and evaluation phase, VSD's empirical investigation consists of qualitative and quantitative methods, that are aimed at evaluating how stakeholders experience a technology with regards to the values they consider important [18,21,30]. The focus of this investigation is to find out how stakeholders assess the technology in question [18]. This phase is heavily affected by the context of usage.

Besides the test and evaluation phase, the empirical investigation can take its place also in the beginning of the project. In a typical software development project, empirical investigation is usually at the beginning, e.g. interviewing users or other stakeholders to find out what they want and hold important.

While conceptual investigation is used for speculating possible value trade-offs, the empirical investigation focuses on evaluating and scrutinizing them empirically. In the case

of “Room with a View”, the empirical investigation was conducted by comparing the effects of a plasma monitor showing video feed of nature and real nature. Their measures included physiological data (heart rate), performance data (cognitive and creativity tasks), video data of eye gaze movement, and social-cognitive data, by interviewing each subject after the experience [21]. They concluded that the augmented window does have the same effects as a real window, but when the participants gazed for 30 seconds or more, real window provided greater recovery from minor stress [21].

According to Friedman et al. [21], empirical investigations can focus on questions, such as “*How do stakeholders apprehend individual values in the interactive context? How do they prioritize competing values in design trade-offs? How do they prioritize individual values and usability considerations? Are these differences between espoused practice (what people say) compared with actual practice (what people do)?*” (p. 4). These investigations can use a variety of methods, such as surveys, questionnaires, interviews, experiments, artefact analysis, and participant observation [22]. Some of these methods will be introduced further in chapter 4.

2.2.4 Technical investigation

The last part of VSD’s tripartite approach is technical investigation. While the empirical investigation focuses on the people and social systems influenced by the technology, the technical investigation focuses on the design of technology itself [7]. It’s carried out in order to identify how the existing technological properties support or diminish the chosen human values [7,21]. One way to think of technical investigation would be that while conceptual and empirical parts conceptualize and specify a possible future design, technical investigation is used to evaluate what is possible to do with current technology, and how the designed features of the technology will deliver the chosen values.

Designing and developing the UI according to the settled specification is a good example of a technical investigation. In a project, a researcher might have found out that the usability of the product or service is very important, because it will have a lot of not technologically savvy users in the future. The technical investigation is then to find out how the product or service could be done as usable as possible, e.g., does larger buttons in the UI make it more usable.

In the case of “Room with a View” [21], the technical properties of the plasma monitor were evaluated. They stated that “*we cannot with psychological impunity digitize nature and display the digitized version as a substitute for the real thing (and worse, then destroy the original)*” (p. 9). That is why Kahn et al. [21] state that the best technological solution for including nature’s benefits for office workers in their work, would be to design

the buildings with nature in mind from the beginning, as in having real windows for every worker.

In sum, the three investigations of VSD aim to identify values relevant to the design and its users. They do it with a somewhat different angle, although inform each other at the same time. Conceptual investigations are used to identify the stakeholders, and what values are important to them. Empirical investigations refine the key values identified in the conceptual investigations and the experiences of the stakeholders on assessing the technology. Technical investigations have the focus on designing the technology itself.

2.2.5 Criticism of Value Sensitive Design

During over 20 years of its constant development, VSD has gone through a lot of criticism, which has helped it to formalize into the most comprehensive approach for integrating human values in technology design, as considered by many [18,22,30]. Most of its criticism has come from VSD's lack of fundamental ethical theory, reasoning, and discussion [7,18,22,23,28,29]. It has also been criticized for taking a number of stances, that are broader than necessary [29], and therefore lacks, for example, a proper practical methodology for identifying stakeholders [18,22].

Yetim [31] claims that VSD fails at stakeholder identification, because the methodology it provides does not "*address the use of deliberative methods and tools to promote joint reflection on values during the design process*" (p. 23) [22]. The problem seems to be that there are no guidelines for the stakeholders to reflect on their own values, value tensions, and wishes for design [22,31]. In other words, the stakeholders are not involved enough in the design process to let them bring their own reflective thoughts and ideas into the design of the technology.

The second criticism, that this thesis will cover, is VSD's lack of ethical theory. Albrechtslund [7] praises VSD for its take on universal values, but at the same time points out that VSD, without ethical theory, leaves unclear of what values and which theories it includes [22]. The original work of Friedman et al. [21] claims that the values they propose, are built on "*an empirical proposition, based on a large amount of psychological and anthropological data, not a philosophical one*" (p. 14). Albrechtslund [7] continues to point out that "*without an explicit commitment to an ethical theory, VSD is an ethically neutral tool, vulnerable to use in support of harmful values such as those of Nazism*" (p.22) [22]. Jacobs and Huldtgren [23] also criticize VSD for lacking a clear methodology, as it doesn't help "*distinguishing genuine moral values from mere stakeholders-preferences and runs the risk of attending to a set of values that is unprincipled or unbounded*" (p. 1). The lack of explicit ethical theory also hinders dealing with value trade-offs [18].

In their original work, Friedman et al. [21] propose 13 human values: *human welfare*, *ownership and property*, *privacy*, *freedom from bias*, *universal usability*, *trust*, *autonomy*, *informed consent*, *accountability*, *courtesy*, *identity*, *calmness*, and *environmental sustainability*. While, in their words, the values are justified with "large amount of psychological and anthropological data", many criticize them for taking these values as universal [22,23,29]. The problem here is that when certain values are universally held, it can provide a normative direction in design [23], meaning that instead of identifying the values based on the design context and designing the technology to suit them, the values would be assumed based on norms. While the set of values proposed by Friedman et al. [21] would, *in fact*, be morally right, it doesn't help on doing context-aware design, as in "*inquiring about the values present in a given context and responding to those values—being sensitive to those values—through design*" (p. 3) [28].

2.2.6 Values and naturalistic fallacy

The problem with trying to create morally righteous values based on research and facts from nature, is the commitment of *naturalistic fallacy*. Originally introduced by British philosopher G. E. Moore [32], the naturalistic fallacy represents the false argument that natural facts could justify moral goodness. This fallacy is similar to D. Hume's *Is–ought -problem* [33], which originally states "*there is no ought from is"*. This means that something *should not be*, just because it already *is*. Manders-Huits [18] criticized VSD's take on values for committing this: "*the conflation of facts and values is exactly what happens when the value stances of stakeholders are taken as the normative input for the VSD of a technology*" (p. 280).

Values are necessarily subjective, which causes difficulties in prioritizing them. If the designer values for example pleasure, is he/she morally *justified* to translate pleasure into the design? If the customer says at the interview that he/she values privacy, is the designer morally *obliged* to design the technology to respect privacy? Whose values are ethically considered most important, and who is the one to make the decision on how the value trade-offs should be resolved?

Besides the ethical discussion, here it is valuable to notice is that the stakeholders of the design might have completely different views on values between themselves and the service provider or developer. Just by someone saying, for example during the empirical investigations, that they value something, does not mean that the value should be incorporated to the design immediately. If someone says that pleasure *is* important, it does not mean that it *ought to be* important.

In sum, VSD has been criticized for not giving a practical approach for identifying stakeholders and their values, and for not including a proper ethical theory. In the original theory of VSD, Friedman et al. propose 13 human values based on a large amount of scientific data. Basing moral values on natural facts is what G. E. Moore kept problematic, as it creates a naturalistic fallacy. VSD would be better to use without the originally proposed values, as then the design process is more contextually aware and ethically considered.

2.3 Future of technology design

While some of the unexpected consequences of existing technologies have impacted negatively to society and the environment, methodologies such as VSD show light on a positive way. Embedding human values into design is ever-increasingly becoming more relevant, because the relation of humans and technology is more joint day by day. Identifying the important values is a task by itself, but how is it possible to translate them into the technology? And who are the ones to do it?

2.3.1 Positivist problem

Technologies are designed to support certain values, while at the same time they diminish others [7]. As described in section 2.1.2, refrigerator is designed to preserve food, but it is awful at heating food. The same way, a screwdriver is good at tightening screws, but not great at hammering nails. But a screwdriver could be used, for example, scratching paintings to create different surfaces to the artist's work, and many other purposes.

Albrechtslund [7] calls this human-screwdriver relation *multistable*, meaning that the screwdriver can have multiple using purposes in different use contexts. Sometimes technology, that is intended for a specific usage or value, can have a different purpose defined by the relational context it is used in. The same technology has the potential to support entirely different values in differing contexts [8,9]. Sometimes a technology can even inspire a whole new field of applications, even though it was originally not designed for it. Albrecthslund gives the example of telephone: originally developed as a prosthetic device for hearing-impaired but was later found in many other useful ways.

As much as the designer would like to deliver a specific value, nothing can guarantee that the technology will do exactly as intended [7,8]. Albrechtslund [7] describes this as "positivism", which in his words is "*the default position that the design of a technology will correspond with the use of technology and that this relation does not pose a problem*" (p. 68). He considers this view as a problem, because design and use does not—historically and phenomenologically—correspond like that, thus naming it as the "positivist

problem". He concludes that "*a theory of design ethics that does not distinguish between intentions and future practice might give users, legislators and others the impression that technology developed under certain guidelines are somehow certified 'foolproof' with regards to future ethical problems and dilemmas*" (p. 71) [7]. In other words, it would be problematic to give the impression, e.g. for the customer, that the technology will deliver the exact value it is designed for and nothing else.

While the designer's power to control the user might be limited, it does not mean that technology could not be aimed towards some value. And, what is even more important, is to think and vision all the values it is not aimed for but could be possible outcomes of its usage. This sets the ethical ground for a designer.

2.3.2 Designer as an ethicist

Acknowledging the ethical importance of technology design gives the reason for a designer to constantly evaluate and identify values during the design process. Designers have a history of raising consciousness in ethical concerns and refusing to give in to the pressure of stakeholder values as they are [19]. But the question of a designer's ethical background remains, in the form of: are the values they choose to hold on to, morally right and justified?

van Wynsberghe and Robbins [9] argue that without an ethical background and scholarship, it is questionable to let the person decide on ethical issues. The task of value discovery, scrutinizing values, value conceptualization and value translation is not something that an average designer, or an engineer, is trained for: "*Just as an engineer should not be responsible for understanding the relevant economic factors of their project—the job of the business manager—we claim that they likewise should not be entirely responsible for understanding the relevant moral values at stake—that is the job of the ethicist*" (p. 957) [9]. They [9] claim that an ethicist is needed for the ethical work in the design of technology. But could it be possible for a designer, or a group of designers, to do the ethical work? This is a much-debated topic [9,23,34].

If it is a question of morality, the professional ethicist is probably to do a better job than an average UX designer. But if the question of morality, that is, is something *right* or *wrong*, is left out, the designer should be able to sense the values through assumptions and empirical evaluation and hold on to them through the design process. This way, the task of the designer would be to identify values (without focusing too much on the moral dimension) and map the possible value trade-offs that the design will have. It would be the role of the designer to advocate for value trade-offs and expand the discussion further into the organization and stakeholders.

While values do often come into conflicts between, for example, the stakeholders, and solving them is a task of its own, designers also need to be aware of their own values. Nelson and Stolterman [35] describe the designer's *character* as the reflection of who they are as a person: "*the deeply embedded philosophical commitments that resonate with a designer's values and guides their design activities*" (p. 9) [19]. Borning and Muller [29] have stated that designers using VSD can fail to make sense of their own part in the design process. This way they take their own moral values unconsciously as a normative input for design, include them into the design, and unintentionally claim unjustified moral authority or impartiality [23]. While dealing with value trade-offs, designers need to be aware of their own values and preferences to truly make impartial design solutions.

2.3.3 Future steps in design ethics

Gray et al. [19] state that "*Comprehensive ethics education in HCI and UX education is critical to ensure that future generations of practitioners take their role as creators of futures seriously*" (p. 10). Manders-Huits [18] explains that "*technology should not only be made 'sensitive' to values, in other words, account for value considerations, but instead the objective should be to have technology consciously and deliberately designed to include ethical value considerations*" (p. 284). Manders-Huits also proposed the term "Value Conscious Design" in order to emphasize the designers' role in clarifying the ethical goals and explicating the chosen ethical theory in the design process [22].

Friedman et al. [21] hope that "*Ideally, Value Sensitive Design will work in concert with organizational objectives. Within a company, for example, designers would bring values into the forefront, and in the process generate increased revenue, employee satisfaction, customer loyalty, and other desirable outcomes for their companies*" (p. 16). Davis and Nathan [22] also conform the idea of VSD becoming the next User-Centered Design—a popular human values directed design methodology—so that focusing and designing for human values will become a norm, rather than an untraditional perspective. The current state is still far from that ideal, though. VSD needs more practical methods for it be fully utilized.

Doing design with ethical considerations has great benefits. Deepening the understanding of a technology's users and their values gives it a more solid base on which to build the technology on. Approaches like VSD can help at identifying and addressing values in the design process, which can advance the technology to be more socially aware and reduce the negative effects it can have when emerging to society.

One downside of doing ethical work in the design process must be the effort it requires. Designers and developers might already have their hands full of other work, which is why

there is no time for ethical reasoning. Effort put into ethical work also takes resources away from other practical design work. Hiring a professional ethicist to design teams or organizations might be a solution, but it is an extra expense, which might be contradicting the organization's economic objectives. Another downside must be the obscure and abstract concept of values and ethics, which causes difficulties in understanding and utilizing ethical consideration in practical work.

This chapter aimed at defining what values are, how they occur in technology design, and how designers should approach value sensitive design. Values are some sort desirable end-states, which people advocate and strive for. Organizations designing technologies include lots of different people with different values, which causes value trade-offs in the technology design. Some of these trade-offs can undermine human values, which can end up in unwanted social impact with technology's usage. Preventing these repercussions requires ethical work done beforehand, which is what VSD is often appraised for.

The literature on ethics in technology design is vast, and this chapter has only scratched the surface of it. It has given the introduction to ethical problems in technology design, which aims to serve as the motivation for designing technology better suited for human beings. It also introduced the methodology of VSD, which serves as the base of the model of designing for human flourishing, later introduced in chapter 4. The model will use elements describing human flourishing as its core, which is why the next chapter, chapter 3, aims at defining what is human flourishing.

3. HUMAN FLOURISHING

Considering human values in the design process is important in order to create technological products and services that improve their users' well-being, or at least do not hinder it. But what are human values and human well-being? This chapter aims to define the optimal state of human functioning called *flourishing*, by introducing two of the most essential concepts of *happiness* and modern models of *well-being* from the field of positive psychology.

3.1 Flourishing, happiness, and well-being

According to Fredrickson and Losada [10], to flourish is to "*live within optimal range of human functioning, one that connotes goodness, generativity, growth, and resilience"* (p. 678). Keyes [11] suggests that flourishing consists of positive "symptoms" of high emotional, psychological, and social well-being [36]. Butler and Kern [36] define flourishing as a "*dynamic optimal state of psychosocial functioning that arises from functioning well across multiple psychosocial domains*" (p. 2). It seems that flourishing is often linked specifically to have multiple areas of well-being, instead of excelling only in one [37].

What is important to notice, is that flourishing is mental health presented in a positive way instead of just the absence of mental illness [10,11]. To flourish is described as being in a positive state, not in non-negative, neutral state. Huppert and So [38] define 10 attributes of flourishing that seem to be the opposite of the effects of e.g. depression: *competence, emotional stability, engagement, meaning, optimism, positive emotion, positive relationships, resilience, self-esteem,* and *vitality*. The opposite of flourishing is described as *languishing*, which is a state that includes emotional distress, psychosocial impairment, limitations in daily activities, and lost work days [10,11]. Languishing people often describe their lives as "hollow" or "empty" [10].

In the literature, "flourishing" is often used synonymously with terms such as "happiness" and "well-being" [36], which is why in this thesis, happiness and well-being should also be defined. Although the terms are often used interchangeably, this thesis aims to distinguish the term "flourishing" from the others to give a more specified design direction. This distinction will be introduced further in section 3.6 after the more common terms "happiness" and "well-being" are defined properly.

Ryff [39] describes happiness as "*short-term affective well-being*". Happiness could also be seen as psychological (and social) well-being, whereas the broader term well-being

takes physical health also into account. Though, physical health does affect also mental health, which is why these terms are difficult to distinguish. Each of these three terms (flourishing, happiness, well-being) aim to describe somewhat the same phenomenon: a good life.

3.2 Perspectives on happiness

Happiness, at its core, is the subjective view of one's life as happy [40]. For millennia, great thinkers have thought of the question of what is good life [41], and within ethical philosophy, happiness has been usually seen as the ultimate goal of human life [42]. For many individuals, the primary goal in life is to experience high levels of happiness throughout their lives [37]. Based on a number of researches, happy people are associated with many desirable outcomes, such as lower rates of divorce, greater educational and occupational success, stronger friendships, and better physical health [36]. Happy people are more altruistic, give more money to charity, more likely donate blood, like other people more on average, and are generally more liked by others [43]. It is safe to say that aiming for happiness is a great goal for an individual, but for groups and societies as well.

3.2.1 Philosophy meets psychology

The power of happiness has led modern psychologists to question, and answer questions about happiness, such as how it is defined, how it is measured, and what are the causes and effects of it [44]. Varied answers to these questions have already been provided by philosophy, religion, political and cultural belief systems, and more recently, the science of psychology [44,45]. Psychology aims to define happiness *empirically*, based on research and proven facts, not on theorizing the objective meaning of happiness. Psychological way of studying happiness is most often based on people's subjective experiences of happiness.

Psychology has not been the only domain in the study of happiness: since ancient times, philosophy has been trying to answer the questions of happiness. Drawing on the ideas of Socrates and Plato, Aristotle was the one to think of the good life, and happiness, to involve more than just feeling good [40]. This historical division in philosophy and contemporary psychology sets the meaning of happiness and well-being into two distinct—though overlapping—concepts: *hedonia* and *eudaimonia* [40,42,44,45,46,47,48,49,50].

Though Aristotle and early pioneers in the field acknowledged these concepts, it has been only recently that the two have been introduced as alternative sources of happiness [42,44,47,48,49]. This division of alternative sources has brought up multiple models of

happiness, each of them trying to define happiness somewhat differently, which has led to confusion of the overall concept of happiness and well-being [44]. The next sections aim to describe what these concepts mean, why this division has been made, and what kind of consequences it has had in the study of happiness.

3.2.2 Hedonia and Subjective Well-Being

The hedonic view of happiness is essentially based on how good an individual feels about his/her life [40]. Hedonic happiness primarily involves the feeling of pleasure [40]. Hedonic pleasure refers to the positive affects derived from getting or having material objects and action opportunities that one wishes to possess or experience [42,50]. These can be e.g. good food, new clothes, a relaxing massage, music etc.; whatever that makes one feel good. The "good life" from a hedonistic viewpoint would be to maximize these experiences [42].

The most researched and used model portraying hedonic happiness is Subjective Well-Being (SWB). Since the publication of "*Well-Being: Foundations of Hedonic Psychology*" [51], SWB has been associated with the hedonic view of happiness [45]. It aims to measure the subjective evaluation of life's goodness with the ratio of pleasant feelings and sentiments to unpleasant ones over time [10]. The proponents of SWB believe that happiness is an internal state that represents one's subjective evaluations about the quality of their lives [44].

Proposed by E. Diener [52], the tripartite model of SWB contains three components: *life satisfaction, positive affect* and *negative affect* [37,43,52]. To be high in SWB, one experiences high levels of positive affect, low levels of negative affect, and a high degree of satisfaction with one's life [41,45]. *Affect* is a conceptual umbrella term representing the experience of emotions and moods, either in positive or negative *valence*, or high or low in *activation* [53,54]. Positive affect has a positive valence and negative affect a negative valence (figure 1). Affects are more enduring and long-lasting states than short-term experiences of emotions.

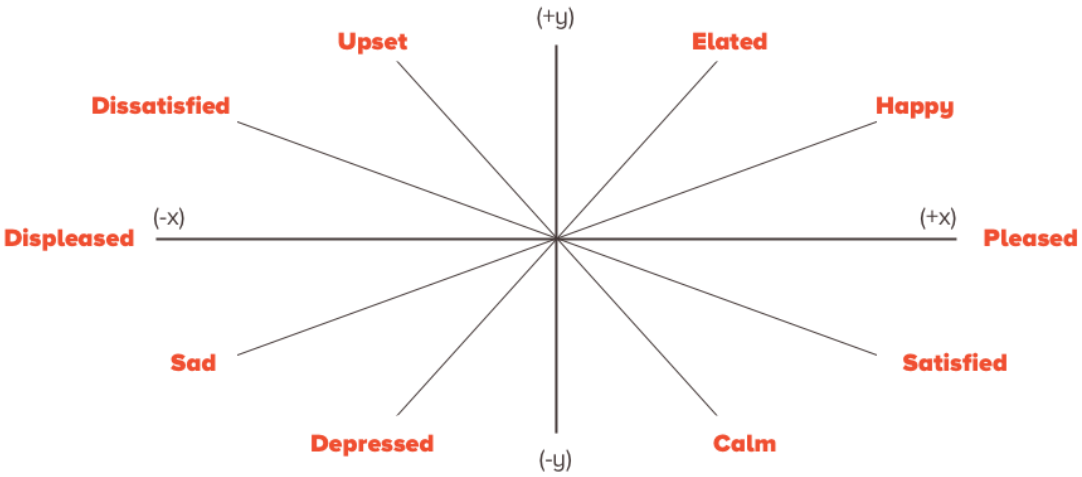

Figure 1. *The valence (x) and activation (y) of affects (p. 6)* ***[54]***

SWB emphasizes the subjectivity of happiness, i.e., how an individual weights the various aspects of their life as they see fit [55]. SWB studies use e.g. self-reports or questionnaires to analyse people's cognitive (life satisfaction) and affective evaluations of their lives [41]. This way, there is no such thing as objective happiness, when each individual is responsible of evaluating their own lives. The meaning of happiness, and state of being happy, is thus different for every individual. According to Diener [41], "*This subjective definition of quality of life is democratic in that it grants to each individual the right to decide whether his or her life is worthwhile*" (p. 34).

One problem with self-reports and SWB is that people can vary their answers different situations. For example, measures in life satisfaction can be affected by the current mood the respondent is in [41,56,57]. Having a positive experience before answering can alter the answer to be more positive. According to Diener [41], people may also answer in a way that is socially desirable: if e.g. happiness is normatively appropriate, people may report they are happier than truly are, as it is socially more acceptable.

In sum, SWB as a model consists of subjective evaluations of the person's view on their life satisfaction, and positive and negative affect. SWB can be seen to measure happiness subjectively. It is democratic, since it lets every person decide whether they feel happy or not.

3.2.3 Problems of pleasure seeking

In hedonic happiness, positive affect is often derived from the sensation of pleasure. Negative affect is also linked (symbolically) with the sensation of *pain*. With these two dimensions, happiness would then consist of seeking of pleasure and avoiding pain. In Freudian psychoanalysis, this instinctive behaviour is known as the *pleasure principle*

[58]. Pleasure seeking and pain avoidance aim to satisfy biological and psychological *needs*.

Seligman and Csikszentmihalyi [59] describe pleasure as "*the good feeling that comes from satisfying homeostatic needs such as hunger, sex, and bodily comfort*" (p. 12). They continue to distinguish pleasure from *enjoyment*, which in their words is "*the good feelings people experience when they break through the limits of homeostasis—when they do something that stretches them beyond what they were—in an athletic event, an artistic performance, a good deed, a stimulating conversation*" (p. 12). Enjoyment, and the emotion of *joy*, also add up on positive affect, thus making people higher on SWB [60]. For some reason, though, people prefer to aim for pleasure instead of enjoyment, even though enjoyment is what leads to personal growth and more enduring happiness [59]. It might have to do with the fact that pleasure is easier and faster to obtain.

One example of this could be choosing television or other similar entertainment over e.g. a challenging book. While reading the book could provide new insights on the person's life and build up intellectual resources which could benefit the reader in the future, watching television does not require as much attention and energy and is easier to do. People might choose television over the book even knowing how much reading would benefit them in the future. This is also a matter of *delayed gratification*: the funny show on television makes one feel good immediately, while the benefits of reading the book might come only somewhere in the future, thus "sacrificing" present time and/or pleasure for future benefits.

Seeking pleasure adds up on *short-term* positive affect, because the experience of pleasure diminishes quickly. Constantly seeking short-term affect take up resources (e.g. time) from pursuing *long-term* goals and well-being, such as having a sense of purpose and direction in life, achieving satisfying relationships, or gaining a sense of self-realization [39]. Trying to maximize short-term positive affect with e.g. unhealthy food, or substance abuse, has also negative effects on health and might obstruct overall happiness and well-being.

Also, avoiding pain, e.g. bringing up memories of a trauma, can hinder the betterment of one's life and well-being [40]. Addressing painful emotions and going to therapy does not *feel good* but could have a significant boost on one's mental health, ultimately leading to better chances of happiness and turning trauma into growth [61]. The hedonic way of "maximizing happiness", i.e., life full of pleasure and no pain, can therefore hinder, or even stop, the advancements to a more promising, fulfilling, and satisfying life.

In sum, people have an instinctive desire to seek pleasure and avoid pain. While pleasure seeking adds up to the positive affect of SWB, it can hinder personal growth and long-term happiness. People should prefer enjoyment (breaking barriers of homeostasis) over pleasure, since it also enhances SWB and provides more long-term satisfaction in life.

While pleasure seeking does not necessarily promote long-term satisfaction, who is to say how one should live their lives? If someone is in their opinion happy and satisfied with their life, what is there to change about it? Is there something more to life than feeling good and satisfied, i.e. being happy? Some of these questions have been tried to answer with eudaimonia.

3.2.4 Eudaimonia and The Good Life

While some of the great thinkers in history, such as Plato, Epicurus, and Marcus Aurelius, did present their views on happiness, it was Aristotle that examined the topic of happiness and "The Good Life" the most [44]. In *Nicomachean Ethics*, Aristotle distinguished hedonism (the life occupied by pleasure seeking) with eudaimonia [44,46]. Nicomachean ethics state that the highest goal achievable by human action is eudaimonia [39,45].

The traditional translation of the Greek term "eudaimonia" has been linked to "happiness", but it is questionable whether it translates the true meaning of it [39,46,62]. For Aristotle, feeling good was an essential part of eudaimonia, which is what he probably meant with happiness [44]. Eudaimonia has been also linked with the term "flourishing", most due to the fact that translating it to "happiness" does not clearly state that eudaimonia is an *objective* good, not a subjective one [9,46]. This way also flourishing would be something else than subjective happiness, or SWB. Eudaimonia, and flourishing, are not something valued as a way to gain happiness, but as an end in themselves, because they are the final, objective goals [9,46].

For Aristotle, eudaimonia is an activity (*enérgeia*) that is aligned with virtue (*kat'aretén*) [63]. It is important to notice that eudaimonia is not a state of mind (e.g. happiness), but a state of *being*, an activity that aims at something (e.g. flourishing) [63]. Aristotle sees happiness deriving from living virtuously, through right actions, in a way that is noble and worthwhile for its own sake [44]. *Virtue*, to Aristotle, is a character's trait including moral excellence; he carefully chose some virtues to strive towards, such as *courage, temperance, proper ambition, patience, truthfulness, wittiness, friendliness, modesty,* and *righteous indignation*, among others [44]. Aristotle thought that the greatest human life, *The Good Life*, was the one that was lived to its fullest potential or lived in accordance with internal virtues [44]. These virtues might not be present in people naturally—*biologically*

from birth—which is why striving towards them requires effort, work, and ultimately personal growth.

The "*daimon*" as a term in the word eudaimonia, is an *ideal* in the sense of an excellence: a perfection which one aims to achieve [39]. Daimon is used to describe the true potential of a human being. Many contemporary psychologists believe that striving for daimon gives *meaning* and direction to one's life [39,40,42,44,49].

Waterman et al. [42] described subjective state of eudaimonia as "*the feelings present when one is moving toward self-realization in terms of developing one's unique individual potentials and furthering one's purpose in living*" (p. 42). The feelings received from self-realization, in this sense, are positive, which means that eudaimonic well-being also produces hedonic well-being [42,47]. Therefore, eudaimonic way of living involves pleasure, but emphasizes that life's meaningfulness and personal growth result to a more long-term happiness [40]. While hedonic way of seeing well-being concerns feeling good, eudaimonic well-being sees that one feels good specifically from one's sense of meaning in life [40].

Eudaimonia has been seen as the base of *objectivist* theories of happiness, since it reflects objective social values more than subjective psychological feelings [44]. The objectivist views of happiness and well-being advocate that there are other objective values than the feeling of pleasure that make life good for a person, such as knowledge, friendship, and ethics [44,64]. Kashdan et al. [44] bring up that these objectivist approaches have been conceptually sophisticated, trying to solve complex and multifaceted constructs, and that they have opened up great challenges: to find an evidence-based psychological understanding of The Good Life. The Good Life describes the objective view on optimal way of living a human life, but without fundamental empirical evidence, it has not been scientifically proven how it is defined and how it should be achieved.

One of these objectivist theories is Psychological Well-Being (PWB). Developed by C. D. Ryff [39], the model of PWB consists of six components that are proposed to enhance positive human functioning: *self-acceptance, purpose in life, environmental mastery, positive relations with others, autonomy,* and *personal growth*. These components have been claimed to represent eudaimonic living and well-being [39,45]. PWB was originally formed to challenge the hedonistic view of well-being in psychology [45]. Research made on PWB has shown, that higher levels of psychological well-being has provided better neuroendocrine regulation, lower cardiovascular risk, and better immune functioning [45], though questions have been raised about the measure's psychometric properties [36].

In sum, eudaimonia is a way of living true to daimon, the true potential of one's being. Eudaimonic way of living aims for a meaningful and fulfilling life, providing positive affect through personal growth and self-realization. Some objectivist models for eudaimonic well-being have been proposed, but are not always kept realistic, since they lack empirical psychological evidence.

3.2.5 Obscurity of objective happiness

One of the reasons why eudaimonia has had such a slow start in the field of psychology might have to do with the fact that Aristotle was not concerned with scientific inquiry [44]. It is difficult to translate classical philosophy into meaningful and accurate scientific language and research programs, when Aristotle was not originally concerned with it and had different aims [44]. Also, eudaimonia is kept as an objective description of happiness, but now in contemporary psychology is studied as a subjective experience, which makes some of the measures incoherent and unobtainable (e.g., how does one evaluate whether they have achieved their full potential or not) [44].

Trying to fit these objectivist theories of happiness under one umbrella—eudaimonia—creates unnecessary obscurity around the topic of happiness and well-being [44]. For example, PWB [39] and Self-Determination Theory (SDT) (which will be introduced in section 3.4) [65], have made profound psychological discoveries about happiness, but trying to link them with the philosophic concept of eudaimonia only serves to obscure scientific gains [44]. Also, while some of the virtues, e.g. "courage", "patience", and "truthfulness", are important philosophical concepts, the attempts to understand them psychologically become much more controversial when they are applied to the lives of actual people, especially in cross-cultural contexts [44].

Kashdan et al. [44] also argue that the search for something "better" than SWB creates potential elitism: The Good Life is something that is reserved for people that somehow have transcended from everyday life into a "better" form of happiness. If eudaimonic happiness is seen as more objective, comprehensive, satisfying, fulfilling, and morally valid, it implies that there are different kinds of happiness with a moral hierarchy [44]. Obscure, philosophic concepts of happiness may seem hard to grasp, which is why this "better" form of happiness will not be reached by everyday people in their everyday lives [44].

Kashdan et al. [44] are not convinced that an objective notion of happiness is even possible, meaningful, or useful. People's subjective interpretations are necessary even when studying objective happiness [44], since there might be no better way of evaluating one's

happiness than asking them straight about it (given the fact that they are not self-deceptive). While philosophical theories are, and have been, important in the study of happiness, more research needs to be done with them to keep them as valid interpretations of subjective happiness.

In sum, Aristotle did not create the concept of eudaimonia keeping future scientific inquiry in mind. Trying to explain subjective feelings of happiness with objective philosophical concepts, such as eudaimonia, creates unnecessary obscurity around the topic. Happiness should be, nevertheless, something that is available and understood by everyday people for the betterment of everyone's life.

3.2.6 Merging perspectives

Many studies have shown that hedonic and eudaimonic well-being overlap and affect each other [42,44,57]. If this is the case, why is it necessary to distinguish the two? What does the study of happiness gain from this distinction?

Waterman et al. [42] hypothesized that there are three categories where these concepts of well-being occur: (a) those for which both hedonia and eudaimonia are experienced, (b) those for which hedonia, but not eudaimonia, is experienced, and (c) those giving rise to neither hedonia nor eudaimonia. In their [42] words, "*From an eudaimonistic philosophical perspective, the category of activities giving rise to eudaimonia, but not hedonic enjoyment is a theoretical null*"(p. 43). They concluded that these hypotheses were supported by their results. When an activity was rated high on eudaimonia, the probability of it receiving high ratings in hedonia was also extremely high. Though, when an activity was high on hedonia, high ratings in eudaimonia were substantially lower. This is, to some extent, the case of pleasure seeking, which was covered in section 3.2.3.

Kashdan at al. [44] argue that these kinds of presumptions are undermining the relevance of understanding how these two concepts work together. Ideas of eudaimonia producing hedonia keep the notion of the direct influence but sometimes remain vague and assume about the causal direction of this relationship [44]. With the whole concept of eudaimonia remaining somewhat vague and obscure, there is no way to know what parts of eudaimonia directly influence hedonic well-being, e.g., does autonomy make you experience pleasure.

Instead of using strict labels of hedonia and eudaimonia, the study of happiness would benefit more of building empirical support for the exact constructs that make people happy [44]. A sharp line between the two creates an artificial moral hierarchy, which has the potential of damaging scientific inquiry and research on happiness [44]. There should

be a mutual need for studying the interrelation of the two as there are for their differences [44].

In sum, in contemporary philosophy and science of psychology, there has been a strict distinction between two concepts of happiness and well-being: hedonia and eudaimonia. The topic between the two has been heated, which has resulted in different researchers to propose theories of how the two should be distinguished and which one is the "better" proponent for real, true happiness. Instead of dividing the two, the scientific inquiry and research would benefit more from trying to understand how these two concepts interrelate and what exact constructs truly build up happiness. One of the models claiming to do so is Martin Seligman's PERMA model [61], which has been widely adopted by positive psychology practitioners [36]. Seligman has argued that the PERMA model combines both hedonic and eudaimonic aspects of well-being [36,61,66].

3.3 PERMA model of well-being

In 2011, Seligman developed his own model of well-being, which was first introduced in his book "*Flourish*" [61]. The book provides, according to the front cover, "*A Visionary New Understanding of Happiness and Well-Being*". This new model of well-being consists of five elements that make up human's well-being: *Positive emotions, Engagement, Relationships, Meaning,* and *Accomplishment*, hence the abbreviation *PERMA* [61]. He suggests that each of these components are intrinsically rewarding and they represent worthwhile goals of human action: they make people flourish [36]. The next five sections describe what these elements are.

3.3.1 P – Positive emotions

The first thing to understand here is that in this context, positive emotions mean more than the experience of pleasure. Although positive emotions make one feel good, they have many other intrinsic reasons than pure hedonic pleasure to be worthwhile to be experienced and strived for [10,60,67,68,69]. While the science of psychology has historically been interested in solving and "removing" negative emotions, it has been only recently that positive emotions and their effects on well-being have garnered attention [10,59]. To understand why, the effects of emotions in general should be understood.

According to Fredrickson and Losada [10], emotions are "*multicomponent systems that simultaneously alter patterns of thinking, behaviour, subjective experience, verbal and nonverbal communication, and physiological activity*" (p. 680). To put it simply, emotions affect almost everything we do as human beings. Emotions are associated with urges to act (*motion*) in specific ways, that have been called as *action tendencies* [60]. Emotions

can be classified by their valence and activation, similarly, as seen in figure 1 [36]. It is possible experience both negative and positive emotions at the same time [70].

Negative emotions include emotions such as *anger*, *contempt*, *disgust*, *embarrassment*, *fear*, *guilt*, *sadness*, and *shame*. Action tendencies are the actions that follow a corresponding emotion: anger, for instance, creates the urge to attack, fear the urge to escape, disgust the urge to expel, quilt the urge to make amends, and so on [60,68]. Negative emotions can be seen as evolved adaptations of our survival instincts in life-threatening situations [68].

Positive emotions, such as *joy*, *interest*, *contentment*, and *love* do not occur in life-threatening situations, which is probably why they do not have well-defined urges to act in a certain way [60]. For example, joy, is what Frijda [71] described as "*free activation*" [60]. The lack of specific courses of action of positive emotions is probably one of the reasons why psychology has been more invested in solving people's negative emotions, than studying the effects and benefits of positive emotions [59].

The most notable theory of the effects of positive emotions is B. Fredrickson's *Broaden-and-build theory of positive emotions* [60,67,72]. It bases on the idea that while negative emotions create the urge to do a specific action, at the same time they narrow *thought*. For example, when one instinctively is forced to escape and run in a life-threatening situation, one does not think of new and novel ideas at the same time. The case is opposite in positive emotions: when one is safe, the environment allows for free thinking, *broadening* one's thought. This combination of thought and action caused by emotions is what Fredrickson [60] called *thought–action tendencies*. Negative emotions narrow thought–action tendencies, while positive emotions broaden them [60,67,72].

Positive emotions have different ways of broadening one's thought. For example, *joy*—often used interchangeably with happiness—creates the urge to play, and be playful, consisting of not only physical and social play, but also intellectual and artistic play [60,67]. *Interest*—often used interchangeably with curiosity, intrigue, excitement, or wonder—creates an urge to investigate, to become involved, or to gain new information or experiences with the person or object that stimulated the interest [60,67,73]. *Contentment*—often used with serenity, or tranquillity—creates the urge to savour recent events and experiences, while creating a new sense of self and view of the world [60]. *Love*, which has been described of as the complex fusion of all the aforementioned (and more), can have all of the tendencies the others have, especially in social bonds [60,67]. After decades of research, Fredrickson [67] has proposed ten key positive emotions with similar descriptions. These will not be covered here, but they can be found in appendix A.

The “building” part of the broaden-and-build model represents the resources, that the broadened thought–action tendencies will provide [67,72]. When people play, under the emotion of joy, the created resources are the skills acquired through the experiential learning [67]. Play often—especially in children—also involves physical activities, such as running and “rough-and-tumble”, which develop physical skills and elevate stamina [60]. Play often involves also a partner or a group of people, and interaction between them creates social resources. Interest and curiosity make people gather new information, which creates knowledge, i.e. intellectual resources [60,67]. Contentment helps people self-realize through the integration of recent events and experiences [67]. Love creates deep, meaningful, and satisfying relationships and social resources [67].

In sum, positive emotions broaden attention, thinking, and action, and these with time build up physical, intellectual, and social resources [60,67,72]. These resources also accumulate and compound over time and they provide new possibilities of actions, as the individual becomes healthier, more socially integrated, knowledgeable, effective, and resilient [10]. This personal growth and new possibilities also provide new positive emotions, which lead to further broadening of thoughts and actions, and so on [67]. This phenomenon is known as the *upward spiral* of positive emotions (figure 2) [67,69,72].

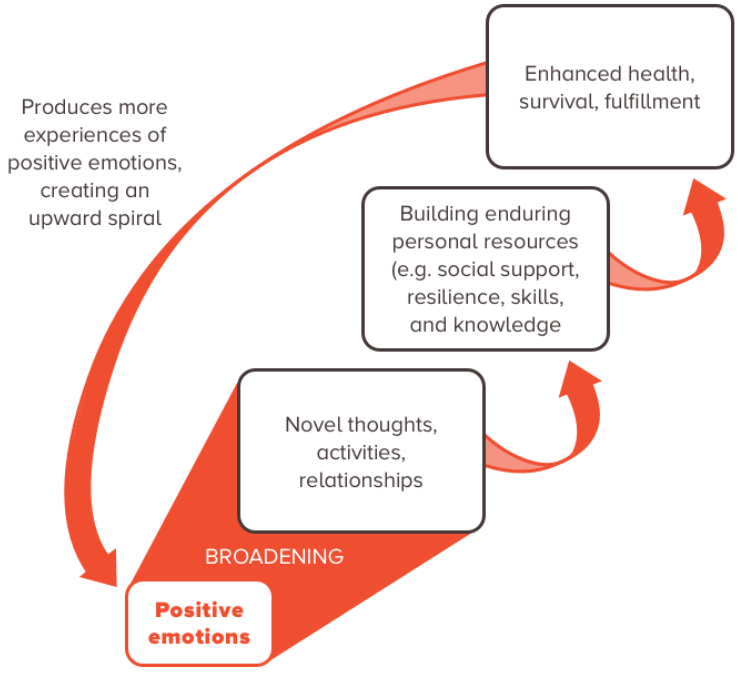

Figure 2. *Broaden-and-build theory of positive emotions (p. 16)* ***[67]***

Another well researched theory and benefit of positive emotions is the *undoing effect* [53,67,68,69]. It theorizes that the positive affect of positive emotions can regulate the effects of negative emotions [68]. This would mean that experiencing positive emotions

regularly could neutralize some of the health risks that negative emotions produce, such as heightened cardiovascular activity leading to e.g. coronary heart disease [68].

In the initial test of the undoing hypothesis, Fredrickson and Levenson [74] conducted a research by measuring participants' cardiovascular reactivity to different emotion inducing films. They first induced high cardiovascular reactivity by showing participants a fear-eliciting film, which was immediately followed by a second clip, which elicited either contentment, amusement, neutrality, or sadness. They measured the time of recovery back to normal cardiovascular activity and how it differed amongst different emotions. Later, Fredrickson with her colleagues [68] replicated the test, this time using a speech preparation task for inducing more heightened cardiovascular activity. The results showed that positive emotions do fasten the recovery compared to neutral or negative stimulus (figure 3), although the reasons for this effect were not exactly clear [68].

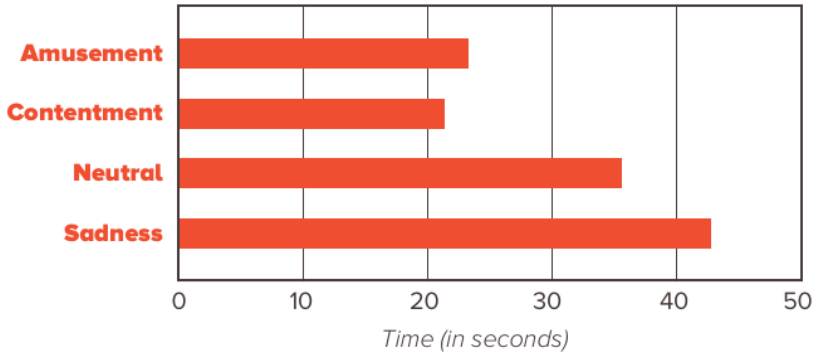

Figure 3. *Time of recovery from speech preparation task under the influence of different emotions (p. 247)* ***[68]***

The effect of faster recovery might have to do with the fact that if negative emotions narrow thought and increase cardiovascular activity (pumping blood to muscles) to do a specific action, positive emotions do the opposite: increase broadened thought (as happens in safe environments) and lower cardiovascular activity, when there is no need for sudden actions [68]. Another explanation would be that positive films do not elicit cardiovascular activity at all, whereas neutral and negative do, prolonging the recovery to normal state [68]. Either way, the effect is positive and beneficial.

In sum, positive emotions broaden the scope of cognition, attention, and action. Positive emotions build physical, intellectual, and social resources, which can start an upward spiral of personal growth and well-being. Positive emotions also help regulating negative emotions, and have multiple other health benefits, which will not be covered in the scope of this thesis. Positive emotions also create positive affect, which can be experienced as happiness, as earlier described in this thesis. The positive affect received from positive emotions could be seen merely as hedonic pleasure but considering the broaden-and-

build model, the upward spiral, and personal growth gained, positive emotions can also produce eudaimonic well-being and make people flourish.

3.3.2 E – Engagement

Seligman [61] compares the word “engagement” with *flow*, which in his words is “*being one with the music, time stopping, and the loss of self-consciousness during an absorbing activity…we merge with the object*” (p. 11). Seligman thinks that engagement is different from positive emotions, because he believes “*the concentrated attention that flow requires uses up all the cognitive and emotional resources that make up thought and feeling*” (p. 11). When people who have experienced flow are asked what they felt during the flow, the answer is usually “nothing” [61]. In flow, people are fully absorbed and involved in what they do [75]. This way, flow experiences can only be referred retrospectively, as the flow state removes one’s consciousness temporarily: people cannot say that they are in flow at the moment.

Flow, also known as the *Optimal Experience*, is a concept created by M. Csikszentmihalyi [76]. The concept of flow has its origins in trying to understand the phenomenon of intrinsically motivated activity: why people do certain things for the sake of simply doing, without *external rewards* [75]. The research on flow has led to conclude the conditions of flow: challenges that stretch existing skills to a level of one’s full capabilities, and clear goals with instant feedback about the progress that has been made [75]. In other words, for the experience of flow to occur, two things are needed: optimal challenge or activity, that is neither overmatching nor underutilizing, and the constant feeling of progression in what one does. If the challenge is too easy, people get bored. If the challenge is too hard, people get anxiety (figure 3).

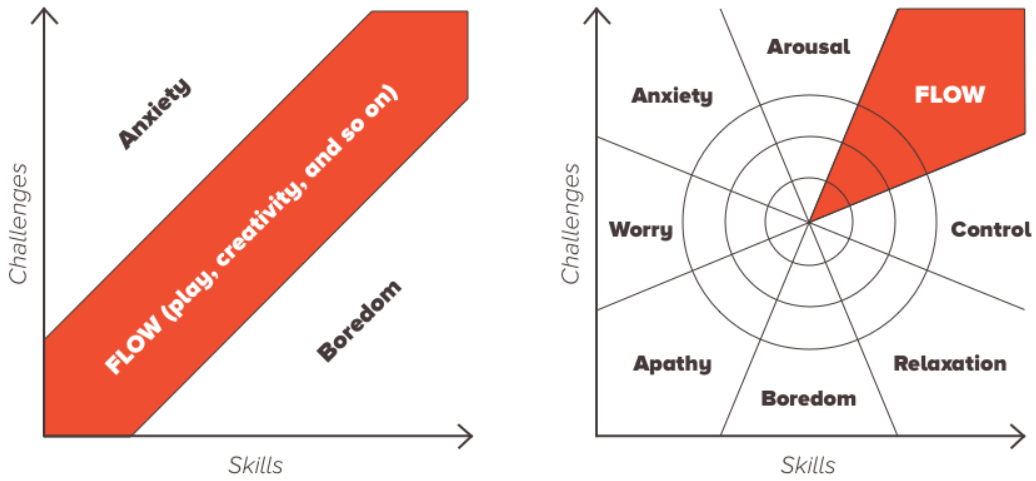

Figure 4. *The original (left) and the current (right) model of flow (p. 94, 95)* ***[75]***

The state of flow is intrinsically rewarding and leads the individual to seek more flow experiences [75]. Through the flow experience the individual also grows in skills, which means that in order to continue experiencing flow, one needs to engage in progressively more complex challenges [75]. This loop is what links experiences of flow to personal growth and ultimately to eudaimonic well-being.

Emotion and motivational theorists have also described flow to be an extreme variant of the positive affective state of interest [44,60]. Curious people, that are full of interest towards people, things, and the world, are well engaged in life. Nakamura and Csikszentmihalyi [75] described "curious" people as *autotelic personalities*: people that tend to enjoy life or "*generally do things for their own sake, rather than in order to achieve some later external goa*l" (p. 93). An autotelic personality can stay longer and more often in flow [75]. Considering flow, autotelic personality, curiosity, and the emotion of interest, it could be that increasing the emotion of interest in people also increases their possibilities of flow experiences.

In sum, the experience of flow (engagement) is the result of taking an activity that is optimally challenging and feeds continuous progression. The state of flow is intrinsically rewarding, leading to seek more states of flow, and creating a loop of self-improvement. Some keep flow as an eudaimonic pursue, while others link it to the positive affect of the emotion of interest.

3.3.3 R – Relationships

Happiness is rarely experienced alone without any other people involving in it [61]. Berscheid and Reis conclude that social relationships are fundamental to life [77]. One of the dimensions in Ryff's [39] model of PWB is positive relations with others. Huppert and

So define positive relationships as an element of flourishing [38]. Fredrickson [60] holds that the experience of love (which is not necessarily romantic) in relationships is a key element for experiencing also joy, interest, and contentment. Relationships can also be found in multiple other models describing well-being.

In this context, relationships are meant as *close* relationships. In their multi-national questionnaire, Huppert and So [38] used question "*There are people in my life who really care about me*" to measure positive relationships and flourishing. This implies that this component of well-being is about the quality and closeness of the relationships, not quantity. The construct of closeness itself is not that clear, though, but people have described it with such words as *love*, *trust*, *commitment*, *caring*, *stability*, *attachment*, *oneness*, *meaningful* and *significant* [77]. Relationships are about giving and receiving [61].

In their study of positive emotions and vagal tone, Kok et al. [69] found out that people's perceptions of their positive relationships have a causal relation between positive emotions and improved vagal tone. Vagal tone is a measurement that reflects the functioning of the vagus nerve, which is the 10th cranial nerve and an essential part of regulating heart rate in response to signals of safety and interest; the higher, the better [69]. Kok et al. [69] have researched that "*low vagal tone has been linked to high inflammation, and lower vagal tone forecasts greater risk for myocardial infarction and lower odds of survival after heart failure*" (p. 2). They explained that perceiving oneself belonging to a variety of relationships improves vagal tone and predicts reduced susceptibility to cardiovascular disease, cancer, and various infections [69]. They also pointed out that diverse and positive relationships predict better physical health and greater longevity [69].

Moments of joy often happen with a friend. Fredrickson [60] describes that shared experiences of positive emotions do not only create mutual enjoyment and pleasure, but also enduring alliances, friendships, and family bonds. Belonging to groups, such as family, also provides meaning for people [61]. Therefore, positive relationships also provide both hedonic and eudaimonic well-being.

In sum, close social relationships are fundamental to human life. Emotion of love, experienced in close relationships, provides also joy, interest, and contentment. Positive relationships also predict better health, reduced amount of diseases, and greater longevity.

3.3.4 M – Meaning

Meaning as a concept, probably the most abstract of the five PERMA dimensions, is the one most often linked with eudaimonia. Section 3.2.6 described that striving for *daimon* gives people meaning and direction in their lives, and that eudaimonic well-being deals

with an appraisal that one experiences happiness explicitly from one's sense of *meaning in life*. But what is the meaning of meaning in life?

Meaning comes from an old German word *meinen*, which translates to "*to have in mind*" [62,78]. This reveals that the word meaning describes the unique human ability for reflective and linguistic thinking [62]. Humans can make sense of things—to give them a meaning, a name—and build mental representations of things. These representations can be connected with different things, creating associations between different meanings, providing a "*web of mental representations*" [62]. Martela and Steger [62] describe that meaning is "*thus about life as interpreted by being capable of reflective thinking*" (p. 538), and "*mentally connecting things*" (p. 537).

Meaning is also often associated with the feeling of belonging to and serving something bigger than the self [38,61,62]. Belonging to social groups, e.g. school class, sports team, family, nation, or religion, and working towards mutual goals and hopes gives people the feeling of going beyond the individual self. Belonging to groups often provides a sense that one's life matters, because life is not anymore only about the individual.

Although meaning is an important concept, it has not been clear that what it is, how it is measured, and how one could achieve it. The concept of meaning is philosophical in its nature, which is why understanding it psychologically requires it to be separated from abstract and complex constructs. Such metaphysical questions as "*What is the point of life? Why does it exist? What purpose does it serve?*" only serve to hinder the psychological research of meaning [62]. Psychological research of meaning aims to look at the subjective experiences of how everyday people experience meaning in life [62], which is how the concept of meaning could be understood and applied for everyone.

In search for the deconstruction of meaning, Martela and Steger [62] distinguishes three components of meaning in life: *purpose*, *significance*, and *coherence*. They [62] argue that in order to live as reflective beings, people need to find a direction for their actions, find worth in their lives, and make sense of the world around them. Although these components are often used synonymously, they are potentially distinct [62,79].

Purpose and meaning are often used interchangeably and sometimes as distinct constructs, which probably adds up to the confusion of the terms [62]. Therefore, in order to add clarity to the concept of meaning, it is worthwhile to distinguish the two. Ryff's [39] PWB describes purpose as having goals and directness in life, which is what many others also do [62]. Martela and Steger [62] explain that the goal-directness that Ryff proposes has a somewhat short-term meaning to it, which is why they propose that purpose means "*a sense of core goals, aims, and direction in life*" (p. 531). People can have goals

that are set in the very near future, such as lose weight, have good grades, make it to the next position at workplace, etc.; these goals do not provide the sense of overall direction in life, which is why the *core* goals in life should be set somewhere further in the future, requiring notable changes in personal life (e.g. “what do you want to be when you grow up?”).

Significance describes the *“sense of life’s inherent value and having a life worth living*” (p. 531) [62]. Japanese people have used the term *ikigai*, which somewhat translates to “*that which most makes one’s life seem worth living*” (p. 535) [62,80]. Sense of ikigai in one’s life relates to lowered risk for mortality [62,80]. The feeling of significance gives value to everyday life. Sources of significance could be e.g. closeness toward other people, i.e. close relationships, and coherence [62].

According to Martela and Steger [62], people have *coherence* when they can notice understandable patterns in life and make the wholeness of it prehensible. Coherence is understanding e.g. who you are, who are you friends with, what is your job, why do you do it and how it serves society; self-realization is a part of experiencing coherence. In other words, coherence is an experience of one’s life making sense [62].

These three dimensions also affect each other. For example, obtaining coherence can increase significance [62]: understanding that you are the only one able to do some specific task at the workplace gives the feeling that you matter and are important. Significance can increase purpose [62]: when the task at hand feels important and that it matters, it can give motivation to keep working on it and finishing it. These three dimensions and their corresponding “thoughts” are presented in figure 5.

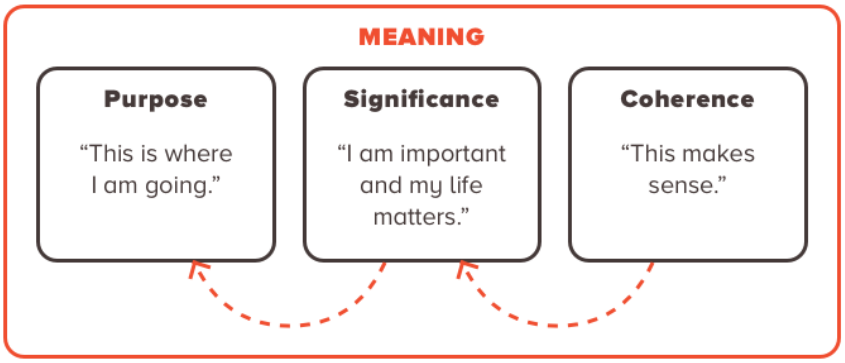

Figure 5. *Three dimensions of meaning in life, based on* ***[62]***

Another way to clarify one’s meaning in life is through *narratives*. According to Bauer at al. [40], narrative identity—the understanding of self through narratives—refers to the “*internal, dynamic life story that an individual constructs to make sense of his or her life*”

(p. 81). With narratives, one could view their overall life as a story: who is the main character and why did he/she behave like that, what kind of other characters are there and how they influence the main character, how the plot twists affect the characters, or what types of possibilities or obstacles does the environment provide to different characters. Creating a story out of one's life can provide deepened understanding of life, i.e. coherence or self-realization [40]. Bauer et al. [40] argue that narrative identity provides life with unity, purpose, meaning, and eudaimonic well-being.

Narratives are also great for self-development. Studies have shown that women who narrated a difficult divorce with a focus on the things that were lost, recovered slower than women who focused on the new possibilities and gained personal growth [40]. Framing difficult parts of life as transformative and self-developing can create more profound understanding of self and produce eudaimonic well-being [40]. Seligman also addresses this in his book as "*Post-Traumatic Growth*" [61]. Comprehending painful memories and emotions as a possibility for growth and positive endings create more mature and self-actualized human beings. Self-actualizers are described having more empathy and affection for other people, being capable of greater love, having deeper friendships, and more complete identification with others [62].

In sum, the abstract and vague construct of meaning is often linked with eudaimonia. Meaning can be deconstructed into three parts: purpose, significance, and coherence. Purpose describes the core goals, aims, and direction in life. Significance describes the feeling that one's life matters. Coherence helps to make sense of self and the world. Narrating one's life can help increasing coherence and self-actualization, which provides more empathy and love towards other people and a more complete identity of self.

3.3.5 A – Accomplishment

With the element of accomplishment, Seligman [61] wants to bring up the notion of achieving goals just for the sake of achieving them. He describes the "achieving life" as "*a life dedicated to accomplishment for the sake of accomplishment, in its extended form*" (p. 19). He wants to emphasize that goal setting and goal achieving is important for human beings, but goals should not be set for the sake of getting an external reward.

People that strive for goals only for the sake of getting an external reward receive less—if at all—positive affect from achieving the goal [61]. For example, people that play games only to win, meet their neutral state (the expected result) when they win, but feel negative affect when losing. People that enjoy playing the game for its own sake, even though the goal would be to win, do not care much about winning or losing.

Another example of goal setting and achieving could be about going to the gym. If one visualizes a dream version of themselves, and then goes to the gym to achieve that, motivation to workout could drop drastically when one realizes that the dream version is so far away. Contrary to that, if one goes to the gym for the sake of just going (maybe to be healthier or more energized), there is no need for external motivation, since the action itself rewards the person. The goal might be some day to be the “dream version”, but the process of getting there is the one that rewards.

The work done for achieving goals can be rewarding in itself. Martela and Steger [62] point out that goal striving leads to feelings of satisfaction and fulfilment. Waterman et al. [42] describe that when individuals are engaged in activities yielding success in realizing their important personal potentials, both hedonia and eudaimonia are experienced. Striving for goals includes a feeling of *mastery*, whether it would be the individual’s self or environmental objectives. Goal striving, intrinsic rewarding, and mastery are key factors in *competence*, which is an element of the self-determination theory, and it will be introduced in section 3.4.2.

3.3.6 Element relations

All in all, each of these elements provide substantial benefits for human well-being and happiness. Positive emotions can broaden thought–action tendencies, build multiple resources, and undo the effects of negative emotions. Engagement and flow provide people optimal experiences, where one can fully submerge into the activity, achieve their fullest functional potential, and develop personally important skills. Close relationships provide love and other beneficial emotions and predict better health. A sense of meaning provides a direction in life to aim at, enhances the importance of one’s life, and helps to make sense of the world and self. Accomplishments and goals develop skills and provide hedonic and eudaimonic well-being through mastery of different activities.

These elements also relate and affect each other. For example, positive emotions can benefit all the other elements. Positive emotions have been found out to predict more meaning in life [44,57]. Flow has been seen to occur more likely when experiencing positive emotions [81]. Experiencing positive emotions create and sustain social relationships [60]. Positive affect and the feeling of success also help people to achieve goals and set new goals. As described in the earlier sections, each of the other dimensions also foster positive affect and emotions.

This is not to say that by experiencing positive emotions every other element is also fulfilled. Each of them should be individually strived for to truly achieve flourishing, as Seligman describes [61]. Portraying well-being to consist of these five elements gives

the complicated structure of human well-being some clarity, which can help individuals to evaluate and understand which elements are in shape for them.

3.3.7 Criticism of the PERMA model

Goodman et al. [37] compared the model of SWB and Seligman's PERMA model to determine if the newer PERMA captured a unique type of well-being from the older SWB. They concluded that PERMA and SWB might be synonymous, because they had high correlations between their elements [37]. Seligman [82] answered that he did not claim that PERMA constitutes a new type of well-being somehow different from SWB, but that PERMA describes the "building blocks" of well-being. Goodman et al. [37] also concluded that PERMA does not offer any insights beyond the model of SWB, which Seligman [82] found incorrect.

However, a notable element missing from PERMA is health, which is central to a person's sense of wholeness and well-being [55]. VanderWheele [55] considers that health has been excluded from PERMA, and other well-being models, for the sake of examining the relationships between positive psychological states and following physical health. VanderWheele also notes that current well-being models do not include virtue and character strengths as elements of well-being, although they have been considered central to flourishing in philosophical literature [55].

3.4 Self-Determination Theory

Self-determination theory, developed by Ryan and Deci [65], is an approach to human motivation and personality. It proposes three inherent human psychological needs, which when satisfied lead to enhanced self-motivation and mental health, and when neglected, to diminished motivation and well-being [65]. The three needs are *relatedness, autonomy,* and *competence* [65]. This thesis will not cover the theory to its full depth, but to the extent that the three needs can be incorporated to the design proposition.

3.4.1 Intrinsic versus extrinsic motivation

The concept of motivation is central to SDT. Motivation has been an important issue in psychology for long, as it is the core of biological, cognitive, and social regulation [65]. Motivation concerns aspects of human activation and intention: energy, direction, and persistence [65]. In the real world, especially in industrial environments, motivation is highly valued, because it makes people *produce* [65].

Human motivation can be set to a spectrum between *intrinsic* and *extrinsic* motivation. Intrinsic motivation refers to doing an activity for its own sake, providing inherent satisfaction, while extrinsic motivation refers to doing activities to attain some separable outcome, e.g. some sort of prize [65]. Intrinsic motivation reflects the beneficial potential of human nature: "*the inherent tendency to seek out novelty and challenges, to extend and exercise one's capacities, to explore, and to learn*" (p. 70) [65]. Enjoyment is often seen to originate from intrinsically motivated behaviour [44]. Intrinsic motivation is growth-oriented [40].

Not much of what people do is intrinsically motivated. Especially social pressures and norms, starting already at childhood, aim people to do activities that are not interesting in themselves, e.g., going to school, getting a degree, or going to work to support a family. The emphasis here is on that while the thing one is doing would be interesting and intrinsically motivating, there is often a myriad of things that need to be done in addition, e.g., getting a desirable profession needs a lot of mandatory courses and activities that are not interesting in themselves, but need to be done in order to get the degree and do the original, intrinsically motivating activity.

SDT has been argued to represent eudaimonic concept of happiness [44]. It does so by framing intrinsic versus extrinsic motives in terms of humanistic, eudaimonic, growth-oriented concerns opposite to materialistic, hedonic, and safety-oriented concerns [40,47]. SDT has argued that relatedness, autonomy, and competence are experiential requirements of well-being, predicting both positive affect (hedonia) and meaning in life (eudaimonia) [57].

3.4.2 Relatedness, Autonomy, and Competence

The need for *relatedness* refers to the feeling of being connected to and cared about by other people [83]. The theory of SDT [65] hypothesizes that the need of relatedness over the life span of an individual has a similar dynamic as the need that infants have for their mothers. Attachment theorists have proposed that a well attached child, as a result of mother's love, is provided with a secure base on which to explore and be fully engaged in life [60,65,84]. Receiving support from other people create the feeling of safety and give rise to intrinsic motivation and the emotion of interest. Some have argued relatedness to be a "fundamental human motivation" [57].

The need for *autonomy* refers to the sense of choice and volition in one's actions and behaviour [83]. Autonomy refers to the "ownership" of one's own actions [57]. According to Ryan and Deci [65], people must experience their behaviour as self-determined, i.e. making the decision for action by themselves, for intrinsic motivation to occur. Autonomy

should not be confused with independence; autonomy means acting with the experience of choice, while independence is referred as not relying on others [45].

The need for *competence* describes the sense of *efficacy* and mastery over one's actions, both in internal and external environments [57,83]. In other words, competence is the ability to do some activity successfully and/or efficiently, or at least get the experience of it. People want inherently to be good at things—to achieve mastery over the self or environment—and positive feedback from success provides positive affect in the form of enjoyment (hedonia) and increases self-esteem, the feeling of self's worth (eudaimonia), when one feels like is able to do something well.

3.4.3 Similarities to PERMA

Of these three needs, two of them are somewhat similar to the elements of PERMA model. Relatedness and Relationships describe almost the same thing: experiencing close, secure relationships that provide the feeling of safety. As described in section 3.3.3, such things as *love*, *trust, stability*, and *attachment*, provide support from individual to another. The other similarity is Competence and Accomplishment: striving for and achieving goals provide positive feelings of success and mastery and improve one's self-esteem as they notice they are capable of achieving things they wanted to.

It seems that the third need, autonomy, does not have any straight connection to the elements of PERMA. However, considering that if autonomy is supported in individuals, they would act according to their own choice—their own *interests*—involving in activities that they inherently want to do. The extreme affective state of interest, on the other hand, is what Fredrickson [60] described as the flow experience. If people would act according to their own interests in activities, they are intrinsically motivated for, it could be possible that the highly experienced emotion of interest would increase possibilities of flow experiences, which is why this thesis proposes that Autonomy would be linked to Engagement. The evidence for this connection is not sure and scientifically proven, but for the sake of the scope of this thesis, it will be proposed as such.

In sum, SDT is an approach to human motivation. It proposes three innate human needs, that when fulfilled, lead to enhanced self-motivation and mental health. The need for relatedness refers to the feeling of being connected to and cared about by other people. The need for autonomy refers to the sense of choice and volition in one's actions. The need for competence describes the sense of efficacy and mastery over one's actions. While SDT and PERMA model do not describe the well-being from the same perspective, they have some similarities. Although combining these two theories together does not

work seamlessly, combining them is beneficial for this thesis to get a more profound understanding of the complex phenomenon called human well-being.

3.5 Elements for design

Summarizing it all, this thesis proposes using Seligman's PERMA model as the description of human well-being and flourishing. The elements are also reinforced with other theories, such as the Broaden-and-build, Flow, and SDT, to achieve a more profound understanding of human well-being. These combined create the proposition of elements, that the technology design can be aimed for (figure 6).

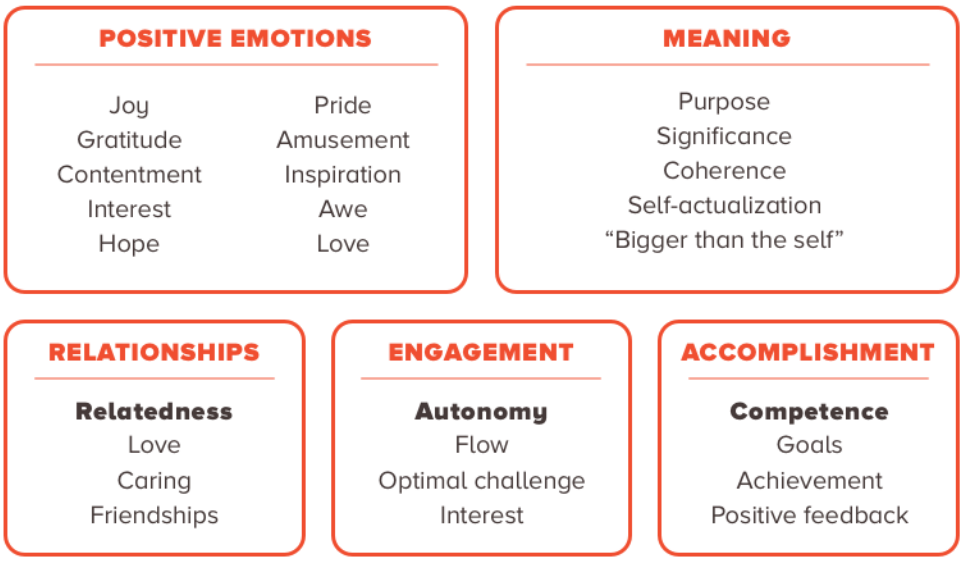

Figure 6. *Elements in support of flourishing, proposed as the design direction*

In figure 6, the five elements described earlier are presented with their corresponding "sub-elements". When designing technology for human flourishing, these elements or sub-elements can be taken as the design direction. Although supporting all of them in every design is not possible, the more the better.

Positive emotions and Meaning are selected as the primary objectives. This selection is made to support the idea of utilizing both hedonic and eudaimonic aspects of well-being – Positive emotions representing the former and Meaning the latter. These two elements also have the most profound background on this thesis. This is not to say that the other three elements are less important, but supporting them mostly lead to either positive emotions or meaning in life, as described earlier in this thesis. The three "lower" elements—Relationships, Engagement, and Accomplishment—thus work to support the primary objectives.

3.6 Flourishing – beyond happiness

This thesis has presented two perspectives on happiness. While being happy has multiple benefits for one's life, it is not always sure how to gain it. The hedonic view of happiness would be to maximize pleasure and other positive affect, while the eudaimonic view proposes that happiness is the result of having a meaningful life. Supporting one of these views can produce completely different way of life than supporting the other one; they both aim for the same objective but produce different outcomes. If the route for gaining happiness is this unclear, is happiness even a good destination for people to strive for?

3.6.1 Aiming beyond happiness

The concepts of hedonia and eudaimonia aim to describe happiness as states in life – a "level" that is gained through some sort of actions. Happiness could also be considered as a feeling. Sometimes happiness could be the result of some sudden positive surprise, providing the emotion of joy, or it could be the result of understanding how greatly things are in one's life, providing the emotion of contentment (/serenity). Maybe happiness is a mix of both of these emotions.

Considering happiness as a feeling would mean that happiness is a short-term experience gained through positive aspects in life. This means that people achieve happiness at times, enjoy the feeling for a while, and then lose it. Aiming to live a happy life would thus consist of continuous loops of happiness and unhappiness, which is not a great objective, at least if the source of happiness is unknown.

The inconsistency of the meaning of happiness (hedonia, eudaimonia, joy, contentment) is also the reason why happiness is not a good objective. This is most likely the reason for the emergence of the term "flourishing". "Flourishing" is probably formed as a mean to describe something that the term happiness cannot – to help with the linguistic problems of happiness. Flourishing aims to describe something that is "beyond" happiness – perhaps The Good Life (figure 7). Aiming for flourishing would mean to aim for a good life (in which e.g. the PERMA elements are in order), and that progression towards the good life would be the source of experiencing happiness.

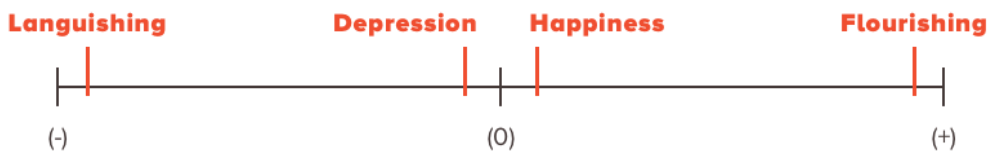

Figure 7. *States and quality of life*

The problem with aiming for flourishing is the complexity of psychologically defining the objective Good Life. This thesis has introduced one model describing it: the PERMA model. Even though the PERMA model would not be the ultimate truth of flourishing, aiming to improve on the elements of PERMA in one's life is a better objective than searching for bursts of happiness randomly. Therefore, this thesis proposes that *aiming for flourishing*—the active and purposeful betterment of one's life—creates a more positive, fulfilling, and meaningful life, than searching for single subjective experiences of happiness. After all, experiencing subjective happiness does not specify the quality of one's life.

It is important to consider aiming for objective and universal Good Life in addition of only justifying one's subjective evaluations of their lives as good. In his book, Seligman [61] (sivu 26) refers to the *Brave New World*, in which the government promotes subjective well-being by drugging the population with an euphoriant called "soma". Public policy would this way promote people's subjective happiness, but at the same time prevent freedom and individuality, which is not a great accomplishment for a society. To create flourishing people and societies, there must be both subjective and objective notions of well-being.

3.6.2 Defining flourishing

Summarizing the topics of this chapter, this thesis will conclude that

1. human flourishing describes functioning optimally in multiple areas of life;
2. human flourishing is an objective end-goal to strive for, not a subjective state;
3. aiming for flourishing is the act of self-improvement; and
4. aiming for flourishing provides experiences of happiness.

This definition of flourishing aims at including both hedonic and eudaimonic well-being without trying to label it to neither of them. While it implies that flourishing is an objective end-goal (which is an eudaimonic pursue), it also emphasizes that feelings of happiness (hedonia) are necessary for human life. If the pursue of flourishing does not make people happy in the long run, perhaps the elements of flourishing are understood incorrectly. In other words, if the actions that people make towards flourishing, the *process* of self-improvement, does not produce happiness, it probably is a wrong path of self-improvement (because it most likely contradicts the person's personality).

Designing technology for human flourishing thus means to design for the betterment of the technology stakeholders' lives. Stakeholders' lives can be enhanced directly as the

result of the technology's usage, or by providing tools for the users for their self-improvement. The elements for design (figure 6) can be taken as the design direction. The possibility of having this sort of design direction is the enhanced well-being of individuals, organizations, and societies.

The challenges of designing for human flourishing include at least two possible difficulties. The first one is that while understanding what makes an individual flourish is a complicated task of its own, creating a technology that supports precisely those actions that each individual takes towards flourishing, is even more complicated. The designer of the technology must have a profound understanding of what makes people flourish, and in addition, a lot of empathy to truly understand the people the technology is designed for.

The other challenge is that human flourishing is not always the most valuable output in many organizations today. The profit-centric commercial world is often concerned with economic value, which is why the well-being of people might only be the secondary objective, if even that. People's well-being is not something that is easily measured and valued – there is no "eudaimonics", as there is "economics".

This chapter aimed at defining what is happiness, well-being, and human flourishing. It used M. Seligman's PERMA model to give the description of flourishing and reinforced it with other models from the field of positive psychology. The topics in this chapter can be used to better understand how human well-being is composed. Technology designers can use this knowledge to design solutions that work to enhance human well-being.

The first challenge presented here—having no knowledge of human flourishing and well-being—can be solved by learning about the topic. The second challenge, which was that profit-centric organizations are not always interested in creating human well-being, is more difficult to solve. The next chapter aims at providing tools and insight on how to build an environment, where the idea of designing for human flourishing could be nudged further into the organizations responsible of design and development of new technologies.

4. DESIGN FOR FLOURISHING (DFF)

To this point, this thesis has introduced value sensitive design and human flourishing as concepts for designing better technology for human beings. This chapter aims at defining and the third and final concept, *service design*, that is needed for the DFF model to be proposed. It also describes how VSD and human flourishing can be combined with service design in service provider–customer relationships to develop technology services that enhance the service customers' and other stakeholders' possibilities for flourishing.

4.1 Service design

Service design describes the activities of designing a service. In commercial world, a *service* is something that a service *provider* distributes to its *customer*, usually exchanging some value from the provider to the customer and monetary value from the customer to the provider. A service differs from a *product* in a sense that service is something that is not tangible, physical, or necessarily owned. For example, Spotify distributes music to its customers, but the customers do not own the music or have physical or digital copies of it.

Design, on the other hand, is a transition between two spaces: the *problem space* and the *solution space* [85]. The problem space describes a problem, a need, or a wish defined by stakeholder knowledge [85]. Stakeholders, as earlier described in this thesis, are the people involved in creating and using the service, e.g. service providers, investors, customers, users, etc. The only group left out is designers, who are the people identifying the problem space and creating solutions for it. Designers, with their knowledge, create the transition from stakeholder needs to design *opportunities*, which make up the solution space [85].

Instead of focusing only on creating the service with the design, service design is often used to seek and provide other benefits already during the design process itself to the parties involved in the process. Service design aims at looking beyond the service itself, recognizing other beneficent opportunities between people, organizations, and materials. Steen et al. [86] refer to service design as "*the process of planning and organizing people, infrastructure, communication and material components of a service, with the goal of improving the service's quality, the interactions between a provider and its customers, and the customers' experiences*" (p. 53) [87]. Steen et al. [86] propose that the benefits of service design during the design process fall into three categories: "1) benefits

for the service design project; 2) benefits for the service's customers or users; and 3) benefits for the organization(s) that are involved".

Benefits of service design can include such things as *improving customers' loyalty*, *reducing costs*, *increasing people's well-being*, *organizing innovation processes more efficiently*, *fostering creativity*, *bringing up new ideas*, and *changing existing ideas* [86]. Steen et al. [86] describe that these benefits are a result of letting stakeholders participate in the design process, *co-designing* the service and other matters related to it. In co-design, people, such as researchers, designers or developers, and customers and users, come together to cooperate creatively [86].

Co-design requires successful communication between stakeholders and designers [85]. Successful communication is often done with methods, that are aimed at eliciting values related to the design. Communication from stakeholders to designers can be done e.g. with methods such as interviews and observation [85]. Designers can communicate their work to stakeholders with e.g. UI mock-ups, scenarios, and sketching [14]. These methods allow stakeholders' values to emerge through their articulation of opinions, views, concerns, desires and so on [14].

In sum, service design is a process for transitioning from problem space—customer needs, worries, or problems—to solution space, by creating a service that addresses and fulfils those needs. Besides creating a fulfilling service, service design also aims to offer benefits to the stakeholders during the design process. These benefits are gained through co-design, meaning that various stakeholders and experts are involved in creative cooperation and successful communication.

4.2 The philosophy of DFF

The DFF model, that this thesis proposes, is a model for designing services for human flourishing. DFF is ultimately a service design methodology and a process, which sets the VSD investigations to find out stakeholder values that align with those which promote human flourishing. The five following sections describe the philosophy—the core idea, principles, and structure—which DFF is built on.

4.2.1 Setting flourishing at the centre of the design

DFF bases on the idea that human flourishing is the most valued objective that the technology design can achieve. DFF uses Seligman's PERMA model [61] as the description of human flourishing, and reinforces it with e.g. Fredrickson's Broaden-and-Build model [67], Csikszentmihalyi's Concept of Flow [75], and Ryan and Deci's Self-

Determination Theory [65]. The elements for design—Positive emotions, Meaning, Relationships, Engagement, and Accomplishment—are presented in figure 8.

Figure 8. *Flourishing as the most valued objective of DFF*

Setting flourishing at the centre means that every stakeholder in the design process agrees on aiming for flourishing and holds it higher than other objectives. For example, the customer, to whom the service is being designed for, cannot decide that they would like the design to have e.g. a feature that hinders people's flourishing, whether it would be beneficial to their organization or not, and even though they would be paying for the development costs. The same rule applies also for the service provider and other stakeholders.

Though, this rule is most likely an ideal in the commercial world – there will possibly always be some sort of trade-offs, that must be done in order to complete the design and the final service. One example could be that the technology is not advanced enough, or just too expensive to support a feature which would benefit flourishing. In these cases, a possible solution would be to identify this trade-off and address it, so every stakeholder in the process is aware of this trade-off. Even though the best-case scenario—the ideal support of flourishing—would not actualize, stakeholders would be aware that the best efforts have still been made.

This thesis proposes that this rule of setting flourishing at the centre is made known to all stakeholders in the beginning of the design process. This sets stakeholders to be aware of this objective, which can help with dealing trade-offs in the future as everyone shifts their mindsets to support the idea of flourishing. Setting a mutual rule also brings stakeholders closer together, as everyone is working towards a goal that is not egoistic. This sort of rule could also provide the feeling of working towards something bigger than the self, which elevates the stakeholders' experience of meaningfulness throughout the design process.

4.2.2 VSD investigations for finding flourishing relevant values

DFF uses VSD's tripartite methodology to identify and understand the values present in the design context. It is worth articulating that *DFF is not VSD*, although they both aim at identifying the contextual values. While VSD aims at identifying values to evaluate whether they are ethical or not, DFF aims to identify contextual values to understand how the design context relates to flourishing – which stakeholder values promote flourishing and which hinder it.

The elements for design, presented in section 3.5, are described specifically as "elements" to differentiate them from "values". The elements are not values in themselves, which means that they are out of VSD investigations' scope: for example, the conceptual investigation cannot consider whether positive emotions in people are morally right, because emotions are not values (though they are heavily related [88]). In DFF, the VSD investigations aim to identify the values in the design context specifically to understand what sort of value context the future service has and how those values relate to human flourishing (figure 9).

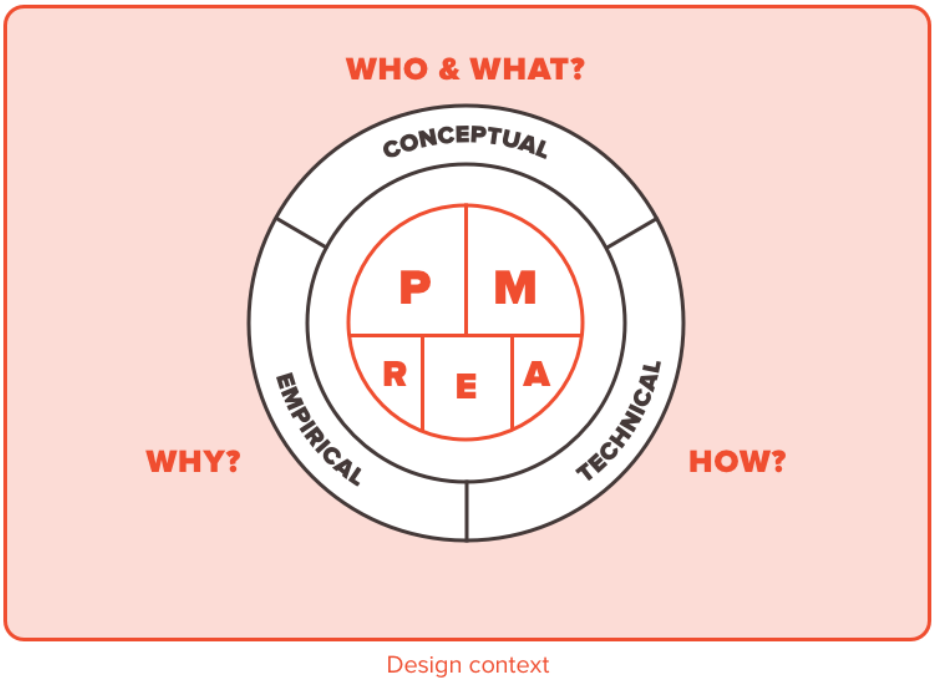

Figure 9. *VSD investigations "surrounding" flourishing in design context*

In figure 9, the three VSD investigations have been represented in a circular shape to emphasize two points. The first point is that the investigations are supposed to circulate and "surround" the elements of flourishing, meaning that they are executed in order to identify the values that relate specifically to flourishing. They are a "filter" of flourishing relevant values in the design context. The second point emphasizes the interdependency

and iterations between the three investigations as described in section 2.2.1. VSD investigations are supposed to inform each other during the design process, which is why each of them has two connected sides with each other.

In DFF, the three investigations are used to understand different aspects of values in the design context (figure 9). Conceptual investigation focuses on identifying *who* are the stakeholders and *what* values different stakeholders hold important. For example, customer could value increasing profits, some designer could value aesthetic properties, an engineer could value the efficiency of development, a chief marketing officer could value how the service affects the brand of the service provider, and so on. Analysing stakeholders will be introduced in section 4.3.1.

The empirical investigation aims at specifying the reasons for *why* these values are important to different stakeholders. For example, a charity worker could value *altruism* or *benevolence*, but simply identifying those values does not explain if they align with flourishing or not. If the empirical investigation finds out that e.g. doing altruistic acts makes different people feel positive emotions, then supporting altruism is an important value to design the technology for. Understanding the background of people's values this way also builds more empathy (opposed to sympathy) and results to better design solutions. One approach for finding out the background for values is *narrative interviews*, which will be introduced in section 4.3.2.

The technical investigation aims at understanding *how* these identified values can be supported with technology design. For example, if supporting altruism is a design direction, how could the UI emphasize that? If there is a "donate" button in the UI, does it make people do altruistic actions? If not, what would be a better solution? Good approaches for exploring these questions are UI mock-ups, sketching, scenarios, and other forms of storytelling, which will be introduced in section 4.3.5.

4.2.3 Eliciting values with storytelling

This thesis proposes using *storytelling* methods with DFF, as they improve the chances of value elicitation [85,89]. Storytelling refers to the activity of users describing e.g. their personal experiences, tasks or goals, and context of use, in free-form or even playful manner. Narrating personal stories gives Meaning to how people see the context (as was described in section 3.3.4), which the designer can use to design meaningful solutions. When interviewing people, storytelling could be emphasized with prompts such as "How has your workday been like?", "How did you feel / what kind of emotions were present when [x] happened?", "Let us go back to that moment…", or "Please tell me your story about [x] in your own words". Another way to help storytelling could be using some

sort of artefacts, like pictures or words, that help people to memorize and refer to specific moments in their life. This will be explained further in chapter 5.

The aim of using storytelling methods in DFF is to create an *open environment* to share emotions and values between stakeholders. Although Friedman et al. [21] encourage asking stakeholders straight about how they reason about certain values, there is a possibility that people do not express their personal values, or adjust their answers to fit other objectives e.g. in their organization with this kind of straight approach. While telling stories do not pinpoint the contextual values with stakeholders' exact words, there is often a lot of benefits in "reading between the lines" and eliciting *tacit* (difficult to verbalize) information. The lack of explicit stakeholder words also restrains justifying bad design choices with arguments like "he/she said to do it this way", which is a part of *designer responsibility*, later introduced in section 4.2.5.

DFF's functioning relies heavily on eliciting values from different stakeholders to understand the design context. Without understanding stakeholders' values, the designer does not know why stakeholders make certain decisions or have certain wishes for the design. Without understanding the contextual values, the possible value trade-offs cannot be understood or addressed.

4.2.4 Solving value tensions

While value trade-offs—as described in section 2.1—describe the promotion of certain value over another, *value tensions* describe the ongoing "pressure" between people, or things, prior to the trade-offs. Value tension is a dilemma between two values for which either one person, or two or more, advocate for. These dilemmas often emerge when two values are both wanted in the design but contradict each other.

Identifying, addressing, and solving value tensions is part of DFF. Identifying value tensions requires understanding the contextual values, e.g., through the conceptual and/or empirical investigations. Addressing value tensions requires open and trusting communication between stakeholders. Solving value tensions is the hardest part, as people might not be willing to let go of their important values. Setting flourishing at the centre of the design, as described earlier, can help solving tensions. Another approach for identifying and solving value tensions is the Value Dams and Flows method [90], later introduced in section 4.3.4.

DFF looks at value tensions keeping flourishing as the most valued objective. In a DFF project, a crucial value tension would be a popular value amongst the stakeholders that contradicts human flourishing. The design context can have multiple different values that

either support or hinder flourishing (figure 10). It is left up to the designer to identify these and address them with the stakeholders to solve the tensions.

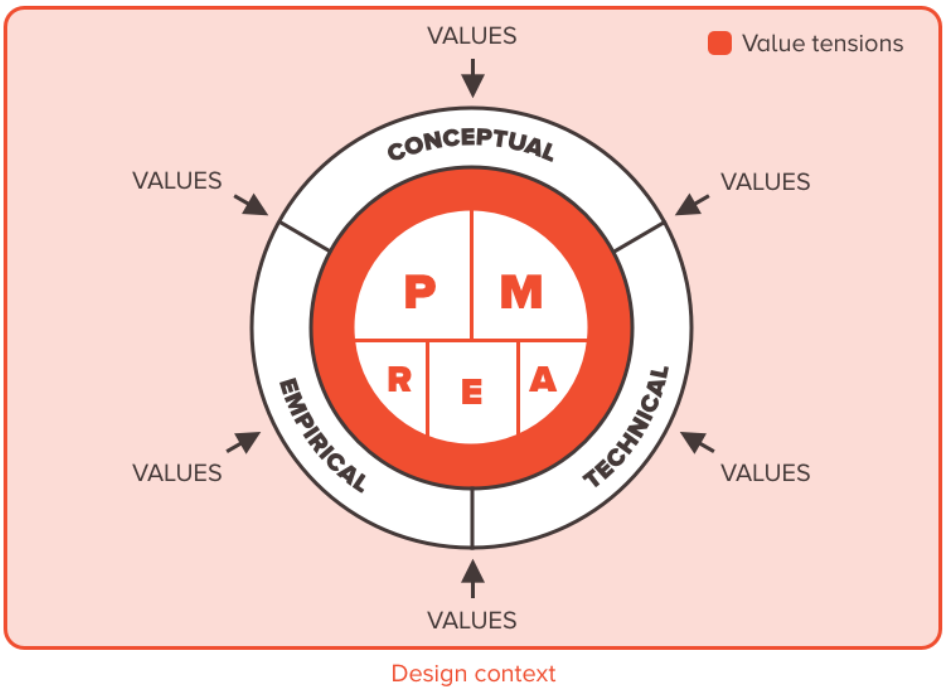

Figure 10. *Some values in the design context support flourishing, while some hinder it. Value tensions are identified and solved in order to aim the design for flourishing.*

A common value tension that Miller et al. [90] found out is balancing needs for privacy with awareness. There could be e.g. a system at the workplace that shows the schedule of one's colleagues, which is good for being aware of what everyone is doing at any time but keeping your schedule "public" might make some feel that their privacy is disturbed. This sort of tension could be examined e.g. with the Value Dams and Flows method.

Efficiency is something that is often valued, at least in the commercial world, because it lets to do the same work faster resulting in e.g. more monetary income. But does efficiency make people flourish? For example, making customer service more efficient and reducing the time spent on each customer could make the customer feel like they are not given enough attention (loss of positive emotions and/or relatedness). Also, the worker, who might hold serving customers important in his/her life, might lose interest and meaningfulness in their job when time spent on an individual customer is reduced. Another often highly valued feature is usability. While usability helps at using things faster and more easily, things can be too usable: some people might feel frustrated if the system decides too much for their actions (loss of autonomy and/or competence).

4.2.5 Designer's responsibility and role

With designer responsibility, this thesis aims to emphasize the importance of the designer's role in addressing and solving value tensions. Values in the design context should be handled objectively so that there is no promotion of certain values without first investigating their relation to flourishing. Stakeholders' opinions and views on values are important information, but the subjective viewpoints should not be handled as normative inputs for the design (as was the case with naturalistic fallacy in section 2.2.6). This means that (bad) design choices cannot be justified with mere stakeholder opinions or preferences.

Designer responsibility describes the role of the designer addressing value tensions between stakeholders. During the DFF project, it is necessary to articulate the values in the design context to create *transparency* – to make stakeholders aware of their own and each other's values. With this transparency and the supposed open environment, the most crucial value tensions could be solved (given the fact that people are polite and understanding). As described earlier in section 2.3.2, designers also need to be aware of their own values to make impartial design solutions. This means that the designer needs to be self-aware enough to understand how his/her values or preferences affect the design choices – to look at their own values objectively.

In sum, the philosophy of DFF bases on the idea of keeping human flourishing as the most valued objective in design. Setting flourishing as the "centre" early in the design process lets stakeholders work towards a mutual, non-egoistic, and meaningful objective cooperatively. DFF uses VSD's investigations to understand the values in the design context, which provides a base for identifying and solving possible value tensions between prominent contextual values and flourishing. Storytelling methods elevate the possibilities of value elicitation. Designers should take an objective viewpoint on values and address them among stakeholders to truly take responsibility of the design.

4.3 DFF methodology

The following five sections aim to describe some methods that can be used in a DFF project. Although they are presented here, it does not mean all of them should be used in every project, and on the contrary, there can be other methods that fit the purpose of DFF. The five following methods presented here are aimed to support the VSD investigations and the philosophy of DFF.

4.3.1 Stakeholder analysis

Stakeholder analysis is used to understand the people involved in the service. Understanding the people involved in the creation and usage of the future service is crucial for understanding what sort of values there are in the design context. Identifying these people also gives the base for further investigations in the DFF, as the designer gains the knowledge of to whom should he/she speak to. Therefore, stakeholder analysis is the first thing to do when starting a new design project.

As described in section 2.2.2, identifying all possible stakeholders is a very difficult—if not impossible—task to do. In their article, Crane and Ruebottom [91] state that the prominent theories of stakeholder identification have been focused mostly on economic roles, meaning that stakeholders are identified in order to understand how they relate to monetary values and objectives. This way of thinking sets stakeholder analyses to be "firm-centric" – to look at the stakeholders only from the service provider's economic perspective [91]. This firm-centric approach also sets the identification to hold on to normative and "typical" roles, such as owners/financiers/stockholders, customers, employees, suppliers, and competitors, which is problematic since it can leave out other possible roles, which are not "worthy" for the sake of economic objectives [91].

Crane and Ruebottom [91] argue that in order to effectively understand stakeholders' e.g. societal values, social issues, and manage relationships with them, firms need to understand the societal roles and groups behind the typical stakeholder roles. In order to do this, Crane and Ruebottom [91] propose that stakeholders should be identified by both their economic and *social identities*. Social identity is socially constructed definition of self [91]. Crane and Ruebottom [91] state that social identities important to business are age, gender and sexual orientation, nationality, race, ethnicity, culture, ability, and political or issue-related identities (e.g. environmentalists, pro-life advocates, or animal welfarists).

Concerning DFF, mapping stakeholders with both economic and social identities is beneficial, because it creates a deepened understanding of people's values. Although these personal values would not be present in work contexts, they are a fundamental driver of people's choices and preferences regarding e.g. design solutions. People's personal values also define what kind of groups they want to—and do not want to—relate to [91], which can create tensions between different stakeholders without regarding their economical identities. Understanding both economic and social identities, and the values those identities hold important, allows the designer to create relations between stakeholders, which can be e.g. visualized on a paper.

4.3.2 Narrative interviews

Narrative interviews are interviews that emphasize sharing stories as means to elicit deepened understanding of stakeholders' perspectives, opposed to standard interview protocols, which promote a question-and-answer discourse [85]. *Narratives*, in this sense, are stakeholder stories, that have undergone the designer's evaluative interpretation [85]. Gausepohl et al. [85] hold that as stories represent the stakeholders' perspectives, they can correspondingly be viewed as representations of the problem space. Thus, narratives are design *artefacts*, that facilitate the designer's transition from problem space to solution space [85]. These artefacts can be e.g. critical incidents, hazardous tasks, equipment, scenarios of activities or tasks, or general insights about stakeholders – their wants, needs, and challenges [85,89].

According to Gausepohl et al. [85], narrative can be defined as a "*sequential ordering of events with a specified structure, a representation of experience, a joint production of storyteller and listener, or as a cognitive schema used to organize and understand experience*" (p. 130). Rau et al. [89] describe that stories consist of a narrative conveying of e.g. how the process of the service delivery went, and how different features of the service affected it. In other words, narratives are not explicit stakeholder stories, but structured representations of experiences as a result of the designer's interpretation. Analysing and structuring stories into narratives is covered in section 4.4.1.

This thesis proposes that the narrative interviews are done either in unstructured, *dialogical* discussions, or in a semi-structured way so that it leaves space for open expression, as that is necessary for stories to form. The usage of open-ended questions is obligatory, because they encourage stakeholders to share information from the stakeholder's perspective, and not from the designer's perspective [85]. While unstructured interviews require a skilled professional to conduct the interview, a semi-structured interview with a base script may help. Narrative interviews can be done in any phase of the project for different purposes, but they have the best impact when done early in the project to gain understanding of the design context.

The way the designer sets the theme of the interview has a big impact on what kind of results it will provide [85]. For example, it would be hard to gain insight on what kind of positive emotions are present in the design context, if the interview's theme revolved only around unpleasant or even neutral topics. On the contrary, setting the mood of the interview to support a positive atmosphere can make it easier for people to share positive stories and emotions.

Letting the interviewee to share personal stories and listening actively can give the interviewee a positive experience of being heard properly. Getting the experience of *being*

heard—of being an important person to be worthwhile to be listened to—can provide multiple benefits, such as the experience of relatedness and personal significance, already during the interview. Explaining stories about topics that seem simple outwards can also help the interviewee to understand matters related to their own work or life, which were not previously thought of (i.e., building a narrative identity, or coherence). These are some of the benefits by the service design process itself, as described in section 4.1.

One of the key elements of having a successful narrative interview is the trust between the participants. Without trust, the interviewee can feel insecure and rejects to share information, even if it would be essential for the research. Building trust between people is a complicated and multifaceted phenomenon, but some of the elements that ensure its presence are e.g. honesty, truthfulness, active listening and answering, and making oneself also show their own emotions and inner thoughts.

It is worth reiterating that narrative interviews are meant as a two-way communication channel, meaning that the information goes equally to both directions. Instead of falling into roles of the interviewer and interviewee, narrative interviews emphasize people meeting on an equal ground, so that both participants can learn something from the event. The narrative interviews could also be called as narrative *discussions* to emphasize this point, but for the sake of clarifying the method and overall process, its name was decided this way.

4.3.3 Co-design workshops

Co-design workshops are events that bring various experts and stakeholders together to focus discussing and working on the selected topic cooperatively [86]. In DFF, the topic of the workshop can be selected e.g. based on the findings of the previous research. In this case, workshops would suit in the process better after the initial understanding of the context has been achieved (e.g., through the narrative interviews). Workshops can also be conducted at any point of the project, e.g. to ideate something completely new, but without a specific topic and facilitation they can become entangled discussions without any direction.

Considering the VSD investigations, co-design workshops are a mix of technical and empirical investigations: while the aim is to define how the stakeholders' flourishing relevant values could be supported, the workshop can additionally bring completely new ideas and views on the topic, as different people from different tasks or environments cooperate creatively. The results of the workshop improve as the amount and diversity of people grow [14].

The role of the designer in co-design workshops is to *facilitate*: to give the topics that the discussions revolve around, to encourage everyone on participating, to set the atmosphere of the event, to manage time, people, and location, and so on. If the amount of people is too large for a single designer to handle, the group can be divided in smaller groups and have more designers/other people to facilitate those. The groups should be constructed so that there is as much diversity as possible, and the hierarchical differences in organizations is acknowledged (as people may not be willing to share stories as openly if the session includes their superior [85]).

4.3.4 Value Dams and Flows

Value Dams and Flows is a method proposed by Miller et al. [90]. It is a process for making decisions regarding value tensions [22]. The Value Dams and Flows method works by (a) avoiding features that even a small number of stakeholders view problematic, (b) identifying and designing for values stakeholders wish to see the technology to have, and (c) systematically addressing value trade-offs [90]. Miller at al. [90] have intended the method to be a lightweight, tangible, and to be easily integrated with other design practices. Value Dams and Flows can be executed as an empirical investigation.

According to Miller at al. [90], "*Value Dams refer to technical features or organizational policies that are strongly opposed by even a small set of stakeholders*" (p. 284). Value Dams are important to identify, because in extreme cases they can undermine the technology's appropriation and cause even sabotage: a project that aimed at increasing sociality among employees by linking kitchens with continuous video and audio ended up in some of the stakeholders placing notes in front of the cameras (perhaps due to privacy issues), completely disconnecting the system at times [90,92]. In their project, Miller et al. [90] drew on the median value (9,7%) of the Kitchen Project research [92] and their own intuition to set the threshold of value dams to be *10%*, meaning that if 10% or more of the stakeholders oppose some value, it is considered to be a value dam. Ideally, this threshold would also account for *how strongly* the value is opposed [90].

Value *flows* are the flipside of value dams – features and policies that a large number of stakeholders are in favour of [22,90]. Identifying and supporting value flows in the design helps the appropriation of the technology, as most of the stakeholders feel the design attractive [90]. To identify value flows (and dams), Miller et al. [90] conducted a survey for getting quantitative information about how the stakeholders experience contextual values, and drew the threshold of a value flow to be *50%* or above of stakeholders that agreed or strongly agreed on the importance of the specific value.

As described earlier, DFF looks for contextual values that support or diminish flourishing, which is why DFF concerns value dams and flows slightly differently. In DFF, a value flow is important to support only if it serves to elevate stakeholders' flourishing. This means that value flows that contradict flourishing are the worst possible challenges when designing for human flourishing (figure 11), because then the majority of the stakeholders should be persuaded to act against their own wishes for the design to achieve flourishing. These cases might be too hard to overcome, which is why the original target—the purpose and potential of the project and its stakeholders—should be researched and selected well before starting the DFF project.

Values in the design context	**Value flow**	**Value dam**
Supports flourishing	Best case scenario	**Might be persuable!**
Contradicts flourishing	Worst case scenario	Good to know

Figure 11. *Value dams and flows either support or contradict flourishing*

In DFF, value dams are also concerned differently than what Miller et al. [90] originally proposed. There might be cases where some stakeholders oppose a certain value, but supporting it could enhance the possibilities of flourishing, e.g. focusing on the quality of the customer service instead of quantity or efficiency. In these cases, it could be possible to persuade these opposing stakeholders (if the amount is low) to support flourishing (figure 11). A value dam that contradicts flourishing is good to be noticed, because it is a sign of flourishing supportive mindsets among the stakeholders.

A way to reason and argument about value tensions could be done with the Value Dams and Flows method. Conducting a survey to measure explicit percentages of stakeholders' dams and flows can give arguments on addressing value tensions: if the minority that opposes some value which would benefit flourishing see that they are a minority, considering the whole context, it might give them a new perspective and let them reason otherwise. Having quantitative data about value dams and flows in the design context can also help understanding the whole concept more in general and create transparency between the stakeholders.

4.3.5 Presenting progress

In service design projects, it is worthwhile to present progress done towards design and development to different stakeholders regularly, because it creates mutual understanding of the purpose and direction of the service being created. Presenting progress outside of the design or development team also enables the emergence of feedback from other stakeholders, which can be used to further evaluate whether the design is headed towards the right or wrong direction. In DFF, different methods of presenting progress are used to communicate the flourishing relevant values – which of them have been selected and how the service will provide them.

This thesis proposes that storytelling is used also in presenting the progress, which helps communicating important values from the designer to the stakeholder. For example, presenting prototypes can be done in many ways: the designer could make a high-fidelity and refined prototype and give it to the user to explore, or make a low-fidelity prototype and present it with a story, a scenario, or a certain task to communicate what is important about the design. In their previous projects, Rau et al. [89] found out that presenting detailed and well-developed prototypes hinder the elicitation of stakeholder feedback, providing only minor suggestions for improvement. Rau et al. [89] suggest that the progress presentations should be done in a rough, simple, and emotionally engaging ways to stimulate feedback. Rough sketches on paper with a narrative of e.g. how the service's checkout could work can deliver the core idea as well, or even better, as a detailed checkout page prototype, especially in the early phases of the development.

As the project continues, and the problem space—the design context—becomes more detailed, the solution space should also. This means that the progress presentations should have correspondingly increasing fidelity continuously describing the solution space more clearly. Considering storytelling, Rau et al. [89] used *videos* to communicate the solution space to the stakeholders. They [89] found out that videos were extremely useful to elicit feedback in the reflection phase, but were not good at supporting early idea creation for the design team, because they take a long time to create and modify to new ideas.

In sum, the methods proposed here are aimed to support the philosophy of DFF. Stakeholder analysis, conducted by identifying different stakeholder groups' economic and social identities, aims at understanding the people and their values in the design context. Narrative interviews (or discussions) promote storytelling activities, which create stakeholder stories that can later be translated to narratives and design requirements. Setting a positive atmosphere for the interviews leads to positive outcomes, concerning both the results of the interview and the experience of the interviewee. Co-design workshops are

events that gather multiple different experts to work on a mutual goal cooperatively. Value Dams and Flows can be used to recognize values in the design context and to help solving value tensions. Presenting progress during the development is beneficial and allows feedback to emerge during the process.

4.4 DFF process

The previous sections described some of the methods that can be used in a DFF project. The next three sections aim to describe how, or in what order these methods could be used, and what sort of resources or effort they take.

4.4.1 Transitioning from problem space to solution space

As described in section 4.1, design activities' goal is to transition from the stakeholder needs to design opportunities – to transition from problem space to solution space. Using storytelling activities, the *Design+Storytelling framework* presented by Gausepohl et al. [85] aims at turning stakeholder stories to design requirements. To put it simply, it does so with two processes: firstly, by conducting the storytelling activities to collect stakeholder stories, and secondly, by analysing and structuring stories into narratives and ultimately to design requirements (figure 12). Storytelling activities in this sense are e.g. narrative interviews and co-design workshops, as covered earlier in this thesis.

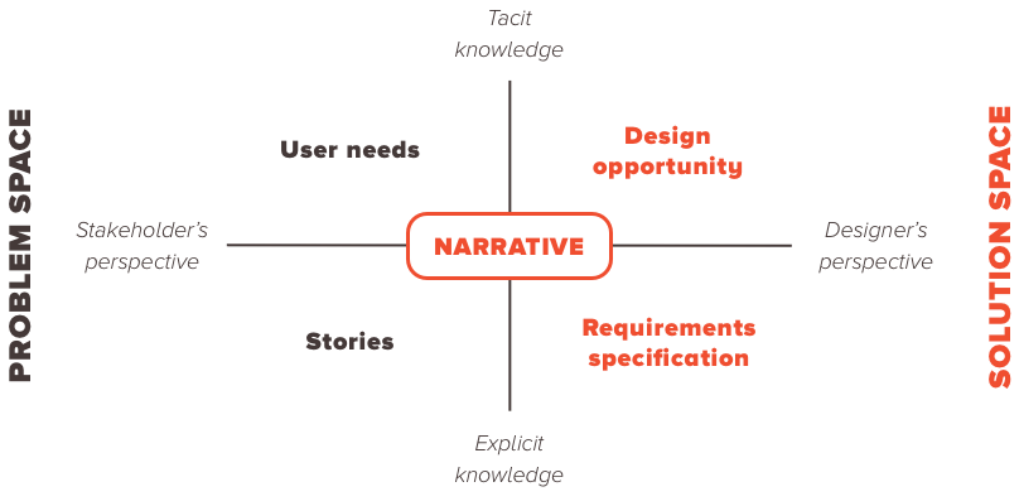

Figure 12. *Turning stakeholder stories into narratives to describe the solution space (p. 130)* ***[85]***

Gausepohl et al. [85] divide the second process into two analyses: *structural* and *thematic* analysis. During structural analysis, the designer organizes the stakeholder story into "*concise narratives that contain important statements of interest*" (p. 131) [85]. Gausepohl et al. [85] use Labov and Waletzy's [93] six structural components to organize

the story into a narrative: *complicating action*, *abstract*, *orientation*, *resolution*, *evaluation*, and *coda*. The definitions and examples for these components can be found in appendix B.

The thematic analysis is used to scan the stories to identify specific user needs of interest to a design problem [85]. Thematic analysis is conducted by creating a *coding scheme*, which is used to specify certain sorts of behaviour. The coding scheme can be selected with research data or other motives. For example, a coding scheme for usability needs would include categories like effectiveness, efficiency, satisfaction, and context of use. In their [85] work in healthcare, the coding scheme included categories of safety in activity and social contexts, as they were interested in patient safety. This example of doing a structural and a thematic analysis on a patient safety story is presented in appendix C. In DFF, the coding scheme for thematic analysis would be the elements of flourishing, i.e., the PERMA model.

4.4.2 Order of the VSD investigations and DFF methods

Although VSD does not propose any specific order for conducting the investigations, this thesis will propose an order for the VSD investigations in DFF. The proposition is made to further clarify (a) the DFF process, (b) the role of the VSD investigations in DFF, and (c) the purpose of the different methods presented earlier. The case is same as with the DFF methods: the example of this DFF process can also be adjusted to different needs and preferences – this is only an example of how the process could be done.

The DFF project is good to start with the conceptual investigation, aiming at understanding who are the stakeholders and what is the big picture of the context the service is being designed in. The method to be used in conceptual investigation is the stakeholder analysis. Analysing stakeholders, at least understanding who they are, lets the designer plan the next phases of the process.

The next phase of the project is the empirical investigation, aiming at building empathy towards the stakeholders by trying to understand why people value certain things. Methods to be used in this phase are especially the narrative interviews, and co-design workshops. Narrative interviews produce results that describe the problem space, while the workshop is aimed more towards understanding what the solution space could be like.

After understanding what the problem space is, the phase for creating the solution space starts. This is the technical investigation, or in other words, the *development phase*. During the development, it is helpful to present progress in multiple occasions to elicit feedback and create mutual certainty about the right design solutions.

Although the investigations in the process seem linear this way, there are situations that mix them a bit. For example, the Value Dams and Flows method, earlier presented as an empirical investigation, can either happen somewhere in the beginning of the project, or even at the latter part. And while Value Dams and Flows method is originally presented as an empirical investigation in the literature, the work done with it can clarify a lot about the stakeholders' values, in the sense of who values and what, which is why it could also be considered as a conceptual investigation in DFF. This thesis wants to emphasize that the need for specifying each investigation into explicit time slots or order is not necessary, although it can make the process more easily understandable.

4.4.3 Relation of design and development

The effort put into design and development work varies during the DFF project. Here "design" is used to describe activities that aim at understanding the problem space – to "*do the right things*". "Development" is used to describe activities that aim at producing a proper solution space – to "*do things right*". This distinction is not made to separate people to different activities, but to separate activities to understand the process better, meaning that anyone in the service provider's organization can do both activities (depending on the skills of course).

While DFF relies heavily on understanding the contextual values, it requires a lot of effort put into design activities in the beginning of the project. Design activities also continue throughout the process, even though the effort put into them decreases when development starts increasing (figure 13). The case is opposite with development activities: as the problem space is not clear in the beginning of the process, there is no point in developing solutions that do not answer the stakeholders' needs or values for flourishing. Development activities start to increase when the problem space becomes clearer (figure 13).

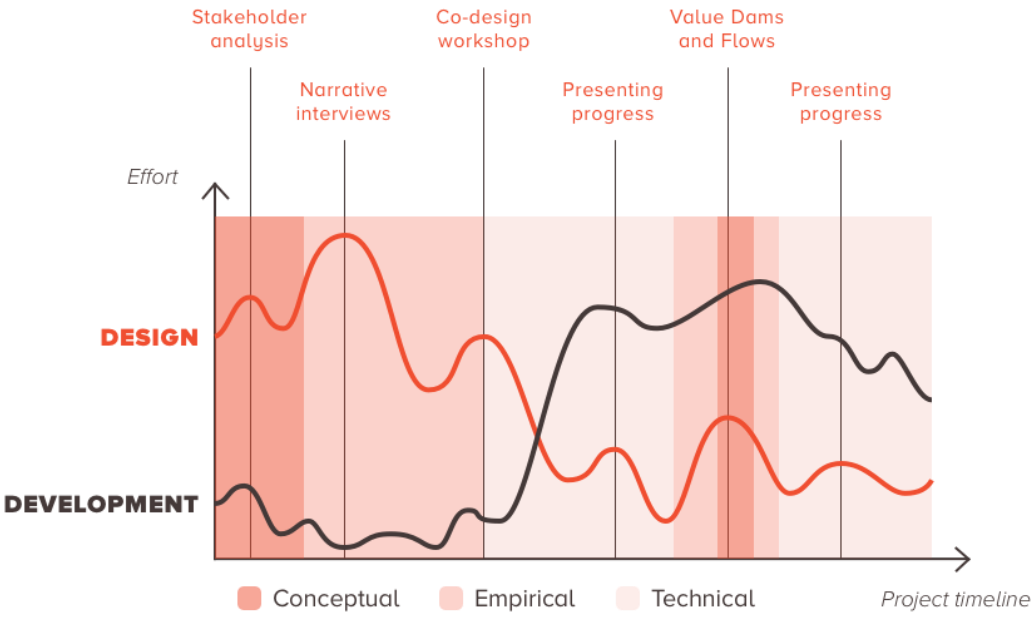

Figure 13. *A hypothetical example of a DFF process*

In the beginning of the process, there is a possibility that some development can be done. If it is recognized that the future service would be e.g. a web service, things that web services require by default can be done. However, no major solutions and decisions should be done in the beginning.

It is worth reiterating that the distinction between design and development is not about the people, meaning that developers can—and most preferably should—participate in design activities. For example, letting a technically advanced professional participate in the early design activities can provide a substantial knowledge of what is possible to do in the design and how much effort it will take. Presenting the progress of the development is also done better by the designer who has the knowledge of what values the progress is supposed to present and how it aligns with the vision of the service.

4.5 DFF in conclusion

In conclusion, DFF is a service design methodology that aims at emphasizing human flourishing related values during the design process. It does so by setting flourishing as the most valued objective, identifying contextual values with VSD's investigations, and solving them correctly with designer responsibility. Methods, that can be used with DFF are e.g. stakeholder analysis, narrative interviews, co-design workshops, Value Dams and Flows, and different progress presentations. The DFF process describes the act of transitioning from problem space to the solution space with a heavy focus on design at the beginning and increasing development towards the project's end.

DFF is formed to be strict in its handling of values; human flourishing related values are always kept more valuable than anything. This strictness is intentional, because it is the only way of setting some sort of threshold. While it is obvious that some values will be promoted over flourishing in the process (e.g. to save time or other resources), the DFF would be illogical if it were to define some values that can bypass the rule of having flourishing at the centre. As explained earlier, when these situations happen, the right way to solve them is just making everyone in the project aware of the trade-off, so that people know the best efforts have been made.

DFF is very theoretical and abstract in its nature, which has its benefits and challenges. The benefit of its abstraction is that it can be adjusted to suit different projects and needs. The designers are free to choose whichever methods they are most familiar with, at least if they produce better results. The challenge of this abstraction is that it does not give practical instructions on how to complete any design, or what a flourishing capable design in general looks like. The next chapter aims to give an example of a project, where an approach like DFF was used, and how the results turned out.

5. CASE STUDY: DREAM FACTORY

This chapter describes a case study on a service design project, in which some of the methods and ideas of DFF was used. The aim of the project was to create a web-based crowdfunding service for elderly people, with a focus on evoking positive emotions and meaningfulness. The focus of this chapter is more on understanding how the specific approach like DFF affected the service design process, rather than on the service itself.

5.1 Research process

The approach used in this research is a *case study*. Crowe et al. [94] line that the case study approach is useful to employ in situations where there is a need to gain in-depth evaluation of an issue, event, or phenomenon. According to Crowe et al. [94], the case study approach allows "*multifaceted explorations of complex issues in their real-life settings*" (p. 1) [94]. This is a well suitable approach here, since the things done in the service design project were something that have not been used earlier in similar contexts, at least not in the company the project was made in.

The aim of the case study was to gain information on how approaches that emphasize human well-being affect the service design process and the final service. The case study was *instrumental*, meaning that it sought to understand what kind of effects the well-being driven approach had, and how the effects could also be replicated and transferred to other contexts and situations [94]. To be more specific, the study aimed to find out what would happen, if the idea and effects of positive emotions and meaningfulness was emphasized in every point of the design process. It wanted to find out what would happen if the process was human-centric, positive, optimistic, emotional, and "warm", instead of focusing on things, risks, money, requirements, and specifications.

This specific case was selected for this research due to the nature of the project and the customer. The project's topic was about fundraising for elderly people's well-being, which meant that the aim of the project was already aligned with the aim of the research's topic – increasing people's well-being. The customer, to whom the service was designed for, was a non-profit organization, implying that economic gains or growth was not their primary objective and that human values were important.

Data was collected in the design part with interviews and a workshop, and later in development with weekly meetings with the customer. All data was qualitative, and it focused on participants' stories, values, and tacit knowledge. Quantitative data would have been

valuable to have, especially considering the evaluation of the project, but gathering it did not fit the scope of the project. The findings, presented at the end of this chapter, were gathered and analysed by the researcher, and are based on his earlier design projects knowledge and observations throughout the project.

5.2 Project context

The context of the project revolved around elderly people's life and well-being. While the situation of elderly care in Finland is mostly adequate with nursing homes and home care, many aspects of life that make it worth living are absent. This means that, in most cases, elderly people's necessary needs are fulfilled, but a lot of the things that they liked doing in the past or in the present are not available due to limitations in e.g. movement or the lack of (caring) resources. These things could be e.g. going to a concert, watching an ice-hockey game live, petting a horse, grilling sausages in the woods, etc.

The client of the project, *Arvokas Vanhuus ARVA Ry*, has been arranging these small everyday things for elderly people from the year 2016. They have called these things as "Dreams", which is where the name Dream Factory comes from. From year 2016, Dream Factory has aimed to survey the elderly people's Dreams, finding a sponsor for them, and then arranging the events.

ARVA Ry contacted the service provider, *Vincit Plc*, to implement their idea of Dream Factory to a web service. The aim of the web service was to allow the sponsoring/donation possibility for everyone in Finland, making it a crowdfunding website to fulfil Dreams. Vincit conducted the user research, design, and development of the service. There were 3 designers and 2 developers from Vincit.

5.3 Project process

The next five sections describe how the case was prepared, how the data was collected and analysed, and how the design and development of the service was done. The process advanced similarly as presented in section 4.4.3, figure 13. The process aimed to create the service and provide other benefits for the participants involved in it.

5.3.1 Preparing the user research

A stakeholder analysis was made prior to the user research. The analysis sought to find out what sort of people or organizations are related to the elderly Dreams. The main groups—the stakeholders of the service—found out were: ARVA Ry and its "Dream coordinator", nursing homes and the caretakers there, home care, relatives, and donors

(individuals and organizations). These groups were the ones that the user research would focus on. There were also other groups, which can be found in appendix D.

Since the goal of the research was to find out the positive emotions and sense of meaning in the context, the designers prepared the interview plans and materials that way. Considering positive emotions, cards with either pictures or words in them were prepared. The pictures were selected based on their ability to evoke positive emotions (e.g. happy faces, bright colours, puppies), and the words were a list of the ten key positive emotions (appendix A). The aim of the cards was to help the research participants express their emotions or to reminisce positive memories easier. The sense of meaning was emphasized in the interview script with questions like “What makes you wake up in the morning?”, “What is important in your work for you?”, “What do you love about your work?”, and “What kind of impact your work has to the society?”.

5.3.2 Narrative interviews

Two designers from Vincit conducted the interviews – seven in total. Two of the interviewees were caretakers from nursing homes, two of them were donors from a company, one from the customer, one volunteering work organizer from a community service organization, and one elderly person. The interviews were made in the participants’ working environments. Each of them lasted about 1,5 hours.

During the interviews, the emotion cards were spread on the table to let the participants refer to them at any moment. Instead of gathering requirements for the service being made, the interviews focused on telling stories about how the participants see the world, what sort of values they have, how does their work correlate to those, and what sort of emotions are present when working. A written consent was made in the beginning of each interview, and gifts were given in the end to thank for the participation. The interviews were filled with positivity, optimism, calmness, and kindness.

All the interviews were recorded on video. While one of the designers focused on interviewing and discussing, the other one focused on capturing the stories and emotions on video. The video material was supposed to be used to create a short film, that could present the context in an emotional and meaningful way.

5.3.3 Analysing the interviews

The interview data was collected on video, which was then analysed. The video material was analysed with a coding scheme (thematic analysis), that contained positive emotions, meaning, and other significant service-related values. Going through the material

with the coding scheme resulted in quotes from the participants and other observations, resulting in total of 192 notes.

These notes, contrary to the structural analysis described in section 4.4.1, were analysed with an *affinity diagram*. Compared to having structural components that the notes would be arranged into, affinity diagram organizes the notes “bottom-up”, creating categories as a process of organizing the notes to similar sections. The categories that formed with the diagram were *roles, customer, dream factory, emotions,* and *values*, with their more specific subcategories. 16 of the notes did not fit these categories and were categorized in *other*.

The video material was edited down to a 11-minute-film by one of the members in the design team, who had a background on filmmaking (not the researcher). The film focused on presenting the stories that the interview participants had related to the design context and capturing the emotional reactions that were related to those stories.

5.3.4 Co-design workshop

The co-design workshop was arranged to further evaluate the results of the interviews, and to produce ideas on how the service being made could support those. Based on the interviews, three roles in arranging Dreams for elderly were identified: *the dreamer* (elderly person), *the dream catcher* (caretaker or relative), and *the dream enabler* (the donor, either an individual or an organization). The structure of the workshop was based around empathizing with these roles at a time, with an introductory in the beginning and conclusions in the end. The workshop consisted of 16 people, which of three were designers from Vincit. The guests consisted of the customer’s members and other interested people invited via social media post. The group was divided into smaller groups of six people, in which the designers from Vincit acted as facilitators. The idea was to have discussions in the smaller groups and then report findings and ideas to the whole group.

The introductory consisted of revising the project’s background and purpose, because every participant was not aware of the project beforehand. Next, the video was shown, which was followed by a small discussion and introduction of the workshop’s participants. The next three parts of the workshop focused on the individual roles. They started by introducing the role and giving examples to “tune in” on the role. For example, “the dreamer” part was presented with questions like “What do you dream about?”, “Where do Dreams come from?” to help with starting the discussions. The facilitator of the group helped in starting the discussion, keeping the discussion stick to the point, and collecting views and opinions on post-its, that were put to the wall near the group. After each part,

the smaller groups presented their discussions to the whole workshop group. After all three, the workshop was concluded. It lasted three hours.

5.3.5 Design and development

Concluding the findings of the interviews and workshop, the development of the service started. The researcher presented the findings to the design team at Vincit, and with the help of another UI designer, some black and white wireframes of the main views of the service were created. These wireframes were used to communicate the features and functionality of the service in weekly meetings with the customer. The functionality of the wireframes was backed up with the findings from the research, i.e., the values that contribute to people's well-being. Later, as the wireframes were accepted by the team and the customer, the brand and visual identity of the service was created by the UI designer. As the functionality of the service was agreed on, the visual identity was added to the wireframes, creating the final look and feel of the service that could then be developed.

Programming the service increased during the wireframing by the development team. As certain functionality was accepted with the wireframes, it was safe to implement those by programming them. The development team, UI designer, the researcher, and the customer kept contact by meeting at least once every week, so that everyone on the project was aware of how the service was being built up. At the end of this project, the first version of Dream Factory was launched to the web [95].

5.4 Key findings

The following findings present the observations that came with conducting the study. The findings were gathered by evaluating this project, that paid attention to positive emotions and meaningfulness as its design direction, to "normal" service design projects, that do not. The findings are the researcher's subjective evaluations.

5.4.1 Effects of focusing on Positive emotions

Emphasizing positive emotions in all parts of the service design process had great benefits. Firstly, focusing explicitly on *positive* emotions meant that the overall drive in the project was positive and optimistic. When leading to think and vision about the positive aspects in everything, the results also become positive. With positive mindsets people have broadened thought, i.e., they become more creative, as earlier described in this thesis. This would have not been possible, if the focus were on all emotions equally (because people tend to focus more on negative sides of things), let alone on "fixing" or removing negative emotions.

Secondly, making emotions feel present and welcomed helped people be more open and humane. Letting people to openly share how they feel about certain things lead to more trust between the participants, and with more trust became more broad and diverse information. People did not need to rationalize their thoughts with force to fit “logical” and “explicit” ideas, because they were let to freely express themselves as emotional beings, which is a more natural way of communication.

Thirdly, presenting the cards at the interviews and workshop helped the participants to verbalize their thoughts easier. Emotions can be hard to verbalize without any external reference, which is why seeing pictures or words that resembled the emotion helped the participants to communicate how they feel and what particular emotion was present at which time. For some, the pictures worked better, and for some, the words were easier to refer to; having both was a good choice. Confirming specific emotions also helped later shaping the UX of the design.

5.4.2 Effects of focusing on Meaning

Emphasizing meaning throughout the project had also significant impact on how the process was experienced for all stakeholders. Firstly, for the customer, and other people that participated to the research, aiming to verbalize what things make their work or life meaningful, provided feelings of coherence and significance. Speaking out loud e.g. what things matter, what makes one feel important, or what is the “greater good” in their actions, can help people realizing things that maybe are not always present in everyday life. Realizing these things can provide e.g. positive emotions, like contentment, gratitude, or hope, and meaning in life. These positive outcomes help people to move towards flourishing.

Secondly, when people are met with “deep” and meaningful questions, it gives the feeling of being an important person to be worthwhile to be listened to, which correlates directly to relatedness and Relationships. With these sort of questions and active listening, the interviewer can build up big amounts of trust that works both ways – the interviewees can tell things that really matter to them, and the interviewers can trust that the information is valid and honest. Having a discussion with meaning and deep trust thus brings people closer together and provides multiple benefits for both sides. One interviewee mentioned that they would have never guessed, that being interviewed is that much fun.

Thirdly, having a project, where its purpose or significance is articulated well, can motivate the people working on it. Having a target that is “bigger than the self” fills the project with purpose and significance. This way, an individual working on the project is not anymore only focused on their own selfish goals inside the project, but more on what serves

the greater objective. Creating wireframes at work to get paid is much less motivating, than creating wireframes to enhance the well-being of other people, while getting paid doing so.

5.4.3 Other observations

Using storytelling as a mean to elicit values was not originally thought of, but during the interviews and their analyses, it proved to be an efficient method. The designers started using storytelling in the project unintentionally through filming the interviews: as the designers wanted to capture emotional and meaningful moments on video, they encouraged the interviewees to share detailed stories about the interview's topics. Telling stories of positive memories and emotions related to those proved to be the most efficient method of articulating how the interviewees experience things that matter to them. While the stories were not necessarily even related to the upcoming service, they provided a deep understanding of how the participants see the subject and what sort of values they have in life, which can be considered as heightened empathy towards the stakeholders of the service.

Another unintentional benefit was that *branding* of the service became fast and easy, since important contextual values had already been identified through the user research. The UI designer in this project commented that usually creating a brand requires extra effort, because there needs to be a separate discussion or workshop on what sort of values does the service want to communicate. In this project, arranging a brand workshop was not necessary, because the value identification had already been done.

Although the development of the service was straightforward, there were some minor value tensions between the vision of the designer, and the client's wishes for the design. They occurred during the weekly meetings, when the designer had wireframed some functionalities to support the identified contextual values and the customer gave their opinion on it. Due to privacy reasons, they will not be further explicated here, but their existence is worth of a mention.

In sum, it seems that focusing on positive emotions during the design process leads to more creative and positive results, allows for more broad, diverse, and honest (user) information, and produces specific emotional design goals for the UX of the service. Focusing on the sense of meaning in the project can produce positive emotions and significance, build deepened trust and honesty between people, and give motivation to work on the project, when its significance is clearly articulated. Storytelling works well as a mean to elicit values, which can lead to e.g. easier branding of the service being created.

5.5 Other notable issues

The case study was done to experiment an idea of creating well-being with service design. When focusing on Positive emotions and Meaning during the service design process, many benefits were found, but some matters were also left unresolved. The next sections aim to describe those.

5.5.1 The order of the case study and literature review

The case study was done prior to the literature review, which had some effect on how the results were formed. In one way, the case study worked as an inspiration for the DFF model, as some notable observations were found out by conducting the case, and in another, the literature review helped explaining why some of the work done during the project succeeded well. One example of this relation is that the case study emphasized only Positive emotions and Meaning, because the researcher did not have full understanding of the PERMA model when starting the case. Though, the literature review concluded that Positive emotions and Meaning are the primary objectives of the design direction, which was a mix of heavy background from the literature and the success of the case.

Doing the case study prior to the literature review lead to some other inconsistencies as well. The Value Dams and Flows method was not tested in the case study, although it would have been an important step for validating the DFF methodology. The Value Dams and Flows method was selected from the literature for the DFF methodology to have both qualitative and quantitative data collection methods, but without researching it in practice, it is difficult to evaluate whether it will work beneficially or not in future cases.

Researching the Design+Storytelling framework (section 4.4.1) prior to conducting the case would have also been useful. Understanding how stories are turned into narratives systematically would have made the analysis part of the project more consistent. In this case the (structural) analysis was done with the affinity diagram, which was an efficient tool for organizing the observations from the user research but doing it did not result in any further or more holistic findings. Contrary to what was expected, referring to the diagram in search for user information quickly during the development, was not effective, probably because the notes were not in order that was logical enough.

On the positive side, conducting the case was responsible for understanding that designing for human flourishing is mostly an ethical decision. How the result of the technology builds up, is due to the values that the stakeholders have in its development. If human flourishing is kept as the most valuable goal, most likely the value trade-offs are made in a way that supports the well-being of people. Noticing the minor value tensions and how

they were resolved in this case made the researcher realize the potential scale of value tensions and trade-offs, if they are acted out in much bigger projects, consisting of e.g. thousands of people.

5.5.2 Problems of translating research results to the design

While the approach and methods used in the user research proved to be good, the question of how the results are translated effectively to the design remains. How does the service support the emotions that were found during the research? What sort of elements in the design could evoke specific emotions, and how is it ensured that it evokes them consistently for different individuals? Can the designer ever guarantee that?

Referring to the positivism problem (described in section 2.3.1), which stated that the intentions of the designer and the technology's future usage does not always align, it would be problematic to assume that certain a design would evoke specific emotions consistently for every person. The design can be directed towards a specific UX but guaranteeing that it succeeds every time is wrong. Designing e.g. the donation possibility as gratifying and rewarding as possible does not guarantee the user's experience of the emotion of gratitude. How people experience donating is due to their personality and values – some people do not even consider donating.

In the case of Dream Factory, most of the user research findings were used to create the brand of the service. Here it was helpful to have specific positive emotions as the direction of the visual identity and how the service communicates. As the findings highlighted all the positive aspects of the context, and doing charity overall, it was easy to emphasize them also on the service, resulting in positive visuals and way of communicating [95].

Although it was good to have specific emotional design goals during the development, it seems that the methods done in this case were more valuable for the process as a whole. Referring to section 4.1, which stated that the service design process aims to create "1) benefits for the service design project; 2) benefits for the service's customers or users; and 3) benefits for the organization(s) that are involved", all three objectives were fulfilled. Firstly, by focusing on Positive emotions and Meaning during the project, the people involved in the project were open, creative, trusting, and optimistic, leading to more broad and honest information (1). Secondly, creating the service to evoke positive emotions for all the user groups (elderly, caretakers, and donors) allows the Dream Factory to be a wholesome platform for the well-being of all users (2). Thirdly, while creating the service assists the customer to increase their activity on doing good for elderly people in Finland,

Vincit also benefitted for having a more “unusual” project, letting its designers to broaden their thoughts and learn new, more humane ways of designing (3).

The case study approach, in its experimental nature, was a fitting choice for this research. The participants involved in the research had not done similar design approach before, which helped experimenting and observing what sort of benefits this sort of approach could have. Completing the case gave broad insight on how these sort of projects can and should be done also in the future.

The deficiency of this research is the lack of its evaluation. Most of the findings here rely on the researcher’s subjective evaluation, which can mean that they are skewed towards seeing the process more beneficial than it really is, as one aim of the study was to find what benefits this sort of approach has. Though, considering the scope of the research, having e.g. a “control project” besides this case to quantitatively evaluate the effects of the approach, would have been too much work. Also, evaluating quantitatively things like values and emotions is hard, because they are always assessed subjectively. For example, the researcher’s evaluation of how “deep and meaningful” the discussions between interviewer and interviewee is subjective, because in different states of mind the same discussion could be seen completely differently. Perhaps the effects of focusing on Meaning were exactly the reason why the interviewer was so invested in learning about the users, thus creating a deep discussion and connection between the two.

In sum, having done the case study prior to the literature review had both benefits and deficiencies. The DFF model did not exist before doing the case, which is why the case study does not include all the elements of PERMA, the Value Dams and Flows method, and lacks in structural analysis. On the positive side, the case worked as good inspiration for the DFF model. It seems that the approach that the study had, resulted in positive results for the service itself and provided other benefits for the stakeholders involved in it.

6. DISCUSSION & CONCLUSION

The final chapter of this thesis discusses the validity and reliability of the research and concludes the thesis by expanding the DFF to broader contexts. While the reliability of the research is uncertain, it worked well as an inspiration for including well-being in design projects also in the future. Generalizing DFF requires further research.

6.1 Discussing the results

Although the order of the case study and literature review resulted in some inconsistencies in the research, the case study worked as a great inspiration for the DFF model. Some matters, such as translating the user research results effectively into the design of the service, and measuring quantitatively the effects of the approach, were left unresolved, meaning that they could be the subject of future studies. Overall, the combination of the case study and literature review worked well for composing the DFF model.

This thesis has introduced ethics of technology design, and the most promising methodology, VSD, for incorporating ethics into the design. It also introduced the complicated structure of human well-being, and the objective goal of flourishing. These two themes were then combined with service design, so that individual designers or organizations could design new technology services that increase people's well-being.

The aim of this thesis was to provide relevant knowledge and methods to design for well-being. It should be noted that while the actions done in this case worked well, it is a single case consisting of one sort of a service provider, a single customer, and the researcher's subjective evaluation. This means that generalizing the DFF model would need further research and validation, as different people and organizations vary in their way of working. The reliability of the methods used in this case is uncertain, although they seemed to work well in this case. DFF cannot thus be guaranteed to work in every situation possible, at least not in this state of its research, but it might have the potential to do so.

However, if the reliability of the results is not kept as a priority, doing this research has managed to provide knowledge about well-being and designing for it, at least for the researcher. Now, as a designer at Vincit, it is possible to start pushing the idea of including well-being as an important objective in service design projects. The results of this research can work as a groundwork for that. The DFF model could then be further validated with different projects, contexts, and people.

6.2 DFF in practice – to whom is it for

The case study focused on a single project, which is why thinking of generalizing DFF into other projects leaves a couple questions: to whom is the DFF for, what sort of knowledge or requirements does it need, and what kind of value does it give to different groups. The next three sections divide potential DFF's usage to three different groups: designers, customers, and service providers. They describe some of the ideas that were formed during this research.

6.2.1 For designers

From the designer's perspective, starting to use DFF in service design projects is quite straightforward. If the designer has the knowledge of human flourishing, designing for it is mostly a mindset – a decision of doing it. Designing for human flourishing is like any other design direction, which is why DFF does not really require any additional effort. It could be argued that advocating for human values in projects that are not interested in them requires effort, but so does any other objective that is not aligned with the external pressure from other stakeholders.

However, at least three things are required from the designers on a personal level: *maturity*, *softness*, and *assertiveness*. The need for *maturity* refers to tackling the deficiency of specific design requirements from the stakeholders. As has been described in sections 2.2.6 and 4.2.5, stakeholder's values should not be considered as straight inputs for the design without first investigating their relation to flourishing. This means that there might be no clear instructions e.g. for what elements should be done for the UI, which can be difficult for junior designers at the beginning of their careers. A mature designer understands the core issue behind the opinions of stakeholders, investigates its relation to flourishing, and completes the design elements based on those.

Softness refers to openness for things, ideas, and people, and the *sensibility* for building empathy and deep connections with other stakeholders. This means that in order to truly understand the values and emotions people have, the designer needs to be present and open, both in rational and emotional level. Belittling, underestimating, and assuming without first familiarizing with people, does not lead to good design solutions, let alone to human flourishing.

However, there is a limit to being soft. *Assertiveness* refers to the capability of designer responsibility, described in section 4.2.5. There will always be times when two values contradict each other, and a value trade-off needs to be done. Here it is necessary for the designer to be assertive enough to advocate, explain, and decide for the value that

benefits flourishing the most. If the designer is too soft, i.e., trying to endlessly understand the opposing point of view and admitting to that, the crucial value tensions are not solved to benefit the objective of flourishing.

The value that DFF provides for the designer is multifaceted. For example, the feeling of working for the enhancement of people's well-being can provide lots of significance and meaning to the project, leading to heightened (intrinsic) motivation. Emphasizing positive emotions in projects can elevate the designer's overall mood. Connecting with people on a deep level can fulfil the need of relatedness and build lasting relationships. Designing for flourishing—and understanding the elements behind it—most likely brings designers themselves closer to flourishing.

6.2.2 For customers

From the customer's perspective, having service providers with approaches like DFF is a possibility for creating well-being, either to themselves or their customers. The use of DFF is logical to use in contexts, where human well-being is already valued (as was in the Dream Factory) but using it in contexts, where human well-being is not earlier thought of, might not work as efficiently. For example, if the customer wants to have a service, that makes their production line workers more efficient, it might be hard to find Positive emotions or Meaning in that context. Maybe Engagement could be emphasized, leading to positive emotions and the development of the workers' skills, but finding engagement-enhancing elements in monotonic and repetitive environments can be challenging.

The requirement for the customer is the ability to *trust* that the decisions being made during the development of the service are honestly aimed at flourishing. If the customer does not trust the designer's vision and expertise, the choices and value trade-offs can be done wrongly. If the trade-offs are done wrongly, e.g. to benefit other objectives than well-being, DFF will not function as well as it could.

6.2.3 For service providers

From the service provider's perspective, approaches like DFF provide completely new value propositions. To create flourishing people, organizations, and societies, service providers need to start thinking of creating other sorts of value than economic value. It is true that "there is no eudaimonics, as there is economics", which is why selling well-being can be a difficult task to do. Without quantitative data, it is difficult to put numbers on how well DFF has managed to enhance well-being, which furtherly complicates the situation. Selling well-being for the project done in this thesis' case study worked well, because the customer was already advocating for human values. It was easy to decide on things

that would benefit e.g. the elderly's well-being, because it was the core idea of the project. How to propose creating well-being to projects and customers, that are not interested in it, then? That is one question for service provider organizations to find out.

Service providers need to start offering other value than economic value also because day by day, customers become more aware of other values, such as societal welfare or environmental sustainability. If service providers want to stay relevant on the market to keep their business running, different sort of value propositions must be made. Offering well-being with approaches like DFF is one way to do so. The value of DFF for service providers is thus new value propositions and relevance on the market.

6.3 DFF and ethics

DFF cannot really be considered as an ethical model – it depends on how one sees aiming for flourishing as a moral thing to do. While someone might see that the betterment of his/her life—to make the best out of their lives—is a right thing to do, the case is not always the same for everyone. The objective Good Life presented in this thesis (thriving on all PERMA elements), cannot be ultimately concerned as universal, fitting every people in every situation, meaning that there can be, and most probably is, also other elements that make people flourish.

If this thesis were to say that aiming for flourishing is morally right, it would commit the naturalistic fallacy (section 2.2.6). It could be argued that the betterment of one's life is the best thing that one can really do, but to what extent? If there was a dilemma, in which one had to choose e.g. from saving a relative's life, or focusing on their own life's betterment, which one would be the morally right decision? For these reasons, this thesis does not claim DFF to be an ethical model – it is only a model to design for human well-being.

After all, human flourishing is only one objective to aim at. The DFF model builds around the idea of human flourishing, but without it, it is merely a framework for analysing and understanding values in design contexts. This framework could be also adjusted to other objectives: for example, if one were to find out the solution to what elements save the planet from climate change, those elements could be used in this same framework to design for sustainability, just by replacing human flourishing with them. Then DFF could be e.g. Design For Environment, or DFE. Or if someone finds a better description of human flourishing, that can be used as the objective.

6.4 The potential of designing for human flourishing

Designing technology for the betterment of people's lives is a powerful task. While the aim is to provide other people well-being, the process of designing also benefits the provider—the individual designer—with significant positive emotions and meaning. Understanding the concept of flourishing, having meaningful interactions with other people, and setting an optimistic view of the future is what makes the designer's life better. If designing for flourishing has such a positive effect on everybody, why is it not a default way of working already?

Maybe designers need to start valuing good life over other, materialistic goals. Maybe then they can introduce its impact also to their organizations. If designing for human flourishing becomes the default way of working in modern organizations, and the business of selling well-being becomes the norm, there is a lot for everybody to gain, all around the world. Designing services for human flourishing is full of potential.

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APPENDIX A: TEN KEY POSITIVE EMOTIONS

EMOTION LABEL	APPRAISAL THEME	THOUGHT-ACTION TENDENCY	RESOURCES ACCRUED	RESOURCES ACCRUED
JOY	Safe, familiar, unexpectedly good	Play, get involved	Skills gained via experimental learning	Joyful, glad, happy
GRATITUDE	Receive a gift or benefit	Creative urge to be prosocial	Skills for showing care, loyalty, social bonds	Grateful, appreciative, thankful
SERENITY (a.k.a CONTENTMENT)	Safe, familiar, low effort	Savor and integrate	New priorities, new views of self	Serene, content, peaceful
INTEREST	Safe, novel	Explore, learn	Knowledge	Interested, alert, curious
HOPE	Fearing the worst, yearning for better	Plan for better future	Resilience, optimism	Hopeful, optimistic, encouraged
PRIDE	Socially valued achievement	Dream big	Achievement, motivation	Proud, confident, self-assured
AMUSEMENT	Nonserious social incongruity	Share joviality, laugh	Social bonds	Amused, fun-loving, silly
INSPIRATION	Witness human excellence	Strive toward own higher ground	Motivation for personal growth	Inspired, uplifted, elevated
AWE	Encounter beauty or goodness on a grand scale	Absorb and accomodate	New worldviews	Awe, wonder, amazement
LOVE	Any/all of the above in an interpersonal connection	Any/all of the above, with mutual care	Any/all of the above, especially in social bonds	Love, closeness, trust

Figure 14. *Ten representative positive emotions of the broaden-and-build model (p. 5)**[67]***

APPENDIX B: STRUCTURAL COMPONENTS OF A NARRATIVE

Table 1 Example statements for structural components of a narrative and the design relevance of each component

Structural component	Design relevance	Example narrative statement
Abstract	Provides a summary of the story, which designers' may use to quickly reference the event during design meetings.	My more successful patient infusion
Orientation	Describes the story's characters and setting, which provides user characteristics and contextual information	Trust me, I was really, like, shaking because this is a chemo.
Complicating action	Temporal sequence of events, which reveals stakeholders' goals, tasks, and potential barriers	She was, like, really – I would say crashing. Put her on nitrogen. Five milligrams didn't do good.
Resolution	Describes how the problem described within the complicating action was resolved, which reveals the scope of the problem's impact as well as currently used process "work arounds" to mitigate the problem.	The patient ended up in the unit because her blood pressure – that's when she started going down too.
Evaluation	Reinforces the stakeholder's perspective and the purpose of the story, which encourages designer's exploration of the problem space from the user's perspective.	So the infusion pump is kind of – it's one of the tools that we use for patient safety.
Coda	A closing statement, which signifies the end of a story. Coda is the only structural component not relevant to design.	So that is what happened that day.

Figure 15. *The structural components of a narrative, in which user stories can be categorized into (p. 132)* ***[85]***

APPENDIX C: TURNING STAKEHOLDER STORIES INTO NARRATIVES

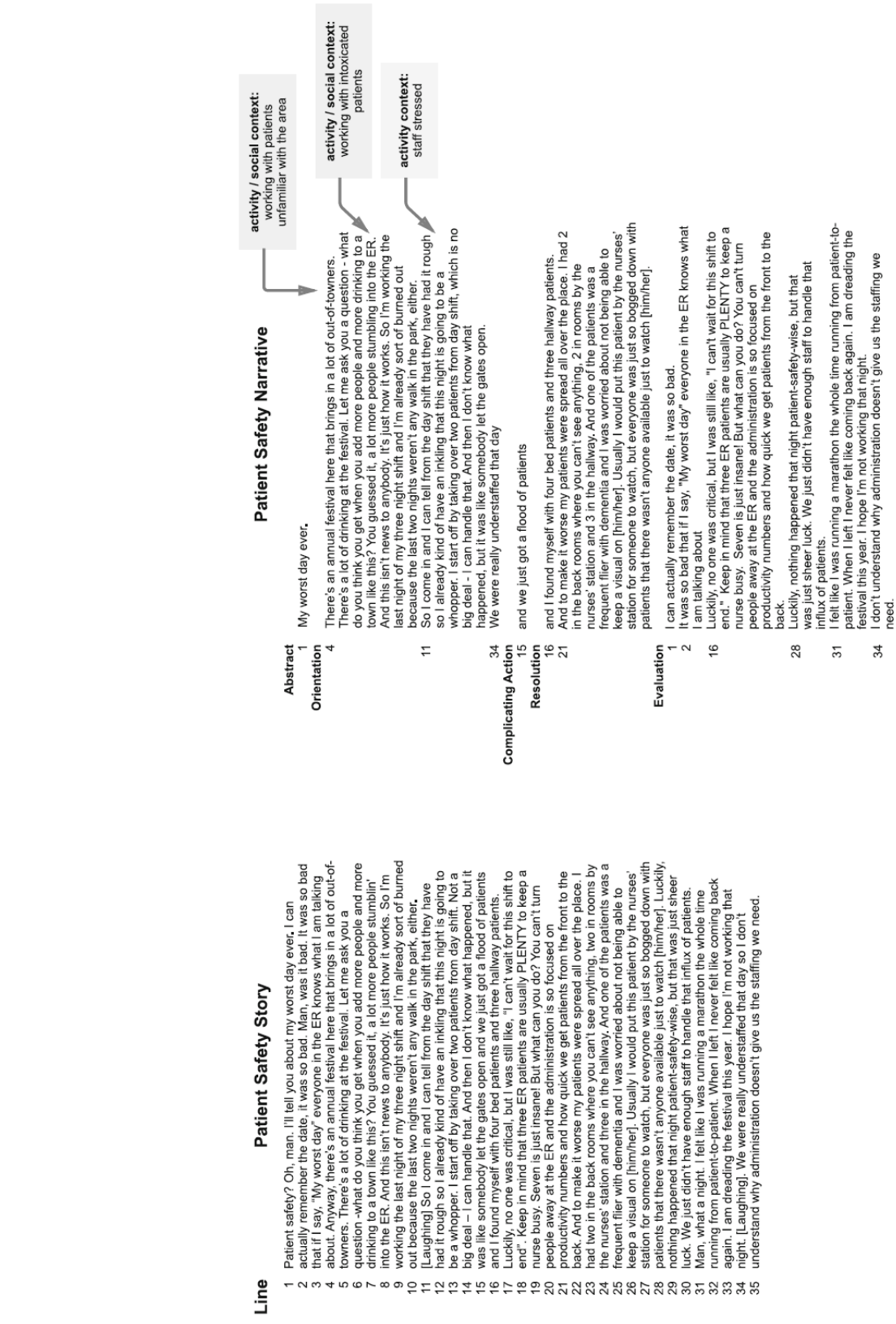

Figure 16. *Turning a patient safety story to a narrative (p. 133)* ***[85]***

APPENDIX D: DREAM FACTORY ECOSYSTEM

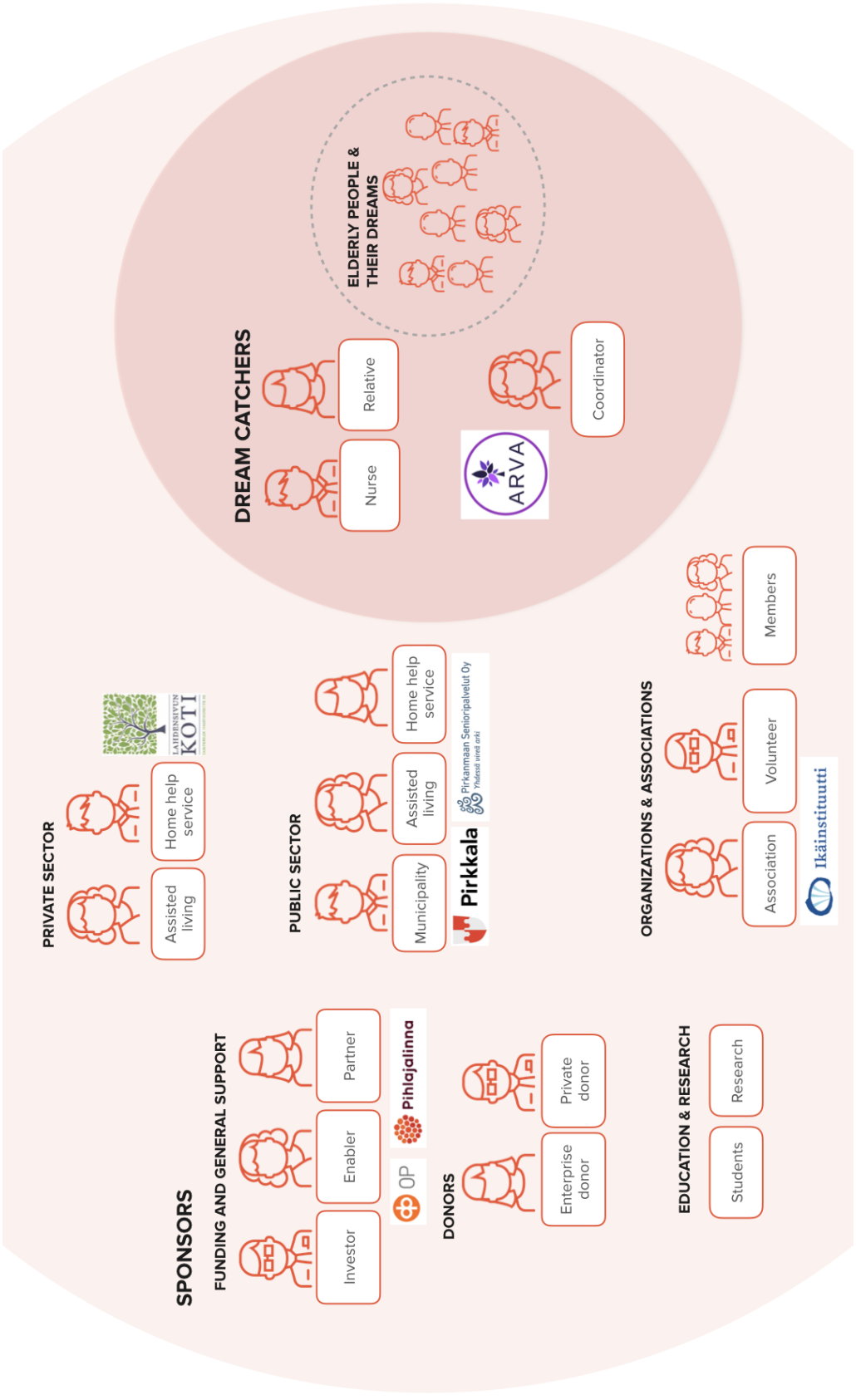

Figure 17. *Stakeholders in the case study's context*